

ANNUAL REPORT
UPON THE
HEALTHINESS OF THE
CITIZENS,
AND UPON THE
SANITARY CONDITION
OF THE
CITY AND COUNTY
OF
NORWICH
FOR THE YEAR
1912,
BY
THE MEDICAL OFFICER OF HEALTH.

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CITY OF NORWICH.

HEALTH COMMITTEE.

The Lord Mayor :

ARTHUR MICHAEL SAMUEL, ESQ.

Chairman :

MR. ALDERMAN MORSE, J.P.

Vice-Chairman :

MR. COUNCILLOR CROTCH, J.P.

Members :

MR. ALDERMAN SHORTEN

MR. COUN. HAWES

„ „ G. CHAMBERLIN, D.L.

„ „ LEMON

MR. COUN. ATTOE

„ „ ODHAMS, M.D., J.P.

„ „ BASSINGTHWAIGHTE

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PREFACE.

TO THE CHAIRMAN AND MEMBERS OF THE NORWICH
URBAN SANITARY AUTHORITY.

GENTLEMEN,

The birth-rate for the year (1912), 22·0 per 1000 of the population, at all ages, is the lowest recorded, the average birth-rate in the 95 great towns being 24·8 per 1000. The fall in our case as compared with 1911 is 0·2 per 1000. The effect of a falling birth-rate, unless it be accompanied by an increased saving of life, in those born, is relatively to diminish both our population and our importance. Last year, happily, an increased salvation of infant life can be recorded. (The infantile mortality rate being 103 as compared with 135 in 1911). Of the infants born there were 110 more males than females. In 1911 the majority of males was 156. 139 of the children born were known to be illegitimate (in 1911 there were 138); and the mortality rate for these unfortunate infants was, as usual, much higher than that for those born in lawful wedlock. The special death-rate among the *illegitimate* infants being 158 per 1000 births, whereas the corresponding rate for the legitimate was only 99. In other words, the chances of surviving one year for the illegitimate children, as compared with their legitimate compeers are, roughly, as 3 is to 5. The largely preventible leakage of lives among these illegitimate children would attain to even greater volume were it not for the efforts made by the Health Visitors, and by some voluntary workers to check the loss.

The gross recorded death-rate 12·78 per 1000 of the population at all ages is lower than the average recorded in the 95 great towns (13·8); and is the lowest but one (1910) we have yet recorded.

The corrected death-rate (see section of report headed "Demographical Statistics") was 11·86 per 1000, and the *comparative mortality figure* 891—taking 1000 as that for England and Wales as a whole.

The Zymotic death-rate, 0·54 per 1000, is well below that for the 95 great towns, taken collectively, which rate is 1·13 per 1000.

The Infantile Mortality rate 102·7 per 1000 *births* is another though less satisfactory one. The corresponding rate in the 95 great towns taken together is 100·7 per 1000 births. In 1911 the corresponding figures were 135 for Norwich and 140 per 1000 births for 77 great towns respectively. In 1912, for the first time, as an outcome of the census, the Registrar General furnishes figures for 95 "great towns." The infantile mortality rate was a very low one throughout the country, and without doubt the relatively cool weather which characterised the late summer contributed to this satisfactory result, and equally, without doubt, the attention which has [been directed to the preservation of infant life throughout the country by the ministrations of Health Visitors, the slow spreading of intelligence, and one likes to believe a heightening sense of responsibility have contributed also; and in our City another powerful preservative agency has been the help given to badly nourished mothers by the Sick Poor Society. During the year under review 526 badly nourished mothers were recommended by me to the Society's Visitors, and at the end of the year 518, or over 98 per cent. had been supplied with milk—with never less than one pint daily, and for periods ranging from two to five weeks, and usually for not less than one month. Among the infants of the 518 mothers helped by the Society there were only 12 deaths. In more than the Buddhistic sense, the Society has thus been "acquiring merit," and indeed ought warmly to be awarded it. By the terms of its constitution the Sick Poor Society is prevented from giving aid to a badly nourished expectant, as distinguished from actual mothers, and to tide these latter over a trying period, I have recommended those coming to my notice to the Charity Organization Society's care. When it has found itself able to help these

expectant mothers, the C.O.S. has usually done so by supplying them with food. The difficulty in connection with the furnishing of help to badly nourished women, both before and after child-birth in the case of the unmarried, would remain acute, but for the generous donations of a subscriber to the fund for their assistance, to which Mrs. Whitty acts as almoner. If any reader care to entrust any money for this fund, either to myself or to Mrs. Whitty (17, The Crescent), he or she may rely upon its being expended discreetly. Such sums as have been entrusted to us have been productive of encouraging results; no public mention is or will be made of any donation received, nor of its expenditure.

The Notification of Births Act continues to be of great service. Under its provisions I received last year notifications of 80 per cent. of all the births that took place in the City. I do not concern myself greatly over the non-notification of a birth when a doctor is present. Notification, in these circumstances, is rather a matter for his conscience, as a professedly law-abiding citizen, than a pressing need. I am, however, glad to report a heightened percentage of notifications as compared with preceding years. Had Parliament directed that a fee should be paid—as in my opinion ought to be done—I should advise your Authority to adopt a more stringent attitude towards non-notifiers than I have done. So long as I secure notification of the births at which no doctor is present I am fairly content. In these latter cases an early call is made at the dwelling by a Health Visitor (always a certificated midwife), who, where needed, gives advice as to the feeding and care of the newly-born infant, and aids in every way the mother. It is from these visits that I obtain a knowledge of the badly nourished mothers, and am enabled to recommend them to the Sick Poor Society. The Matron of the Maternity Charity often also calls my attention to the nourishment of the mother when sending in notifications of births attended by midwives attached to that institution. To prevent delay between our gaining a knowledge of the needs of a badly nourished mother, and the supplying of milk by the S.P.S.'s Visitor, the Health Visitor is instructed to supply

it (temporarily) at once, and so delay is avoided. The Health Visitor represents the interest which our civic family, the whole local community, takes in the welfare of these its youngest and most helpless members; and tempered with discretion this intelligent concern is of real value to the well-meaning, but often ill-informed, parent; and is also efficacious as a restraint to, and for reproof of, the indifferent and the careless. As I have often said before, and have once more to repeat: it is by means of these visits, aided by a heightening of the general level of intelligence, and of the standard of housing, that we most hopefully can expect to change unsatisfactory elements in the attitude toward the obligations of parenthood adopted by some mothers (and fathers), and to substitute for these a civic consciousness that healthily to rear up a child, is a racial duty, the effective discharge of which is one of the most patriotic duties that can be rendered to State.

During the year the Health Visitors (who also act as School Nurses) paid 13,565 visits and revisits to dwellings (3,416 of them in connection with school medical inspectorial work). They found in these dwellings 811 sick persons. At their suggestion 139 houses and 582 persons were cleansed, more or less effectively—19 of the latter (school children) compulsorily. Of the householders they found 185 out of work at the time of the visit, and 489 working only irregularly. Of 2,020 newly-born infants visited 1,836 were being fed from the breast, 37 breast and spoon fed, 34 fed from *long tube* bottles, 54 from bottles with short teats, 26 entirely spoon fed, and 33 partly from breast and partly from bottle, 11 of them long tube feeding bottles. 246 of the infants were ailing at the time of the first visit. Altogether 5,533 visits and revisits were paid to infants. 1,369 of the mothers were “healthy,” 200 “healthy but not strong,” 89 “very delicate,” 429 “badly nourished,” 100 went out to work, and 61 took in work at home. The Health Visitors got bad methods of feeding changed for better in 149 instances. 84 still-births were notified during the year, and 34 sets of twins. 175 infants were fed more or less completely with “Glaxo” (dried milk); these infants being brought

to the Municipal Offices once a fortnight to be weighed. "Glaxo" proved of benefit in the great majority of cases, in some of quite remarkable benefit, but, of course, not with all. Of the dwellings visited by the Health Visitors those with one bedroom only (11 per cent.) contained an averaged population of 3·6 persons at all ages; those with two bedrooms (42 per cent.) 5·7 persons at all ages, or 2·8 per bedroom; those with three bedrooms (43 per cent.) 4·9 persons at all ages, or 1·6 per bedroom; those with four bedrooms (3 per cent.) 4·9 persons at all ages, or 1·2 per bedroom; and those with one room only, bed and living room (1 per cent.), 3·7 persons at all ages. The average population per dwelling, at all ages, taking the whole of the dwellings in the City, is estimated to be 4·4 persons at all ages.

The Local Government Board requests that the M.O.H. will state, each year, in his Annual Report, what are the arrangements for carrying out the Medical inspection of School children, and furnish a summary of the work done, and of the results. The arrangements in this City remain unaltered. The M.O.H. is the S.M.O., and is the administrative, advisory, and supervisory officer. The actual inspections *in the Schools* being carried out by the Assistant School Medical Officers; in practice almost entirely by Dr. Allen. The following is a summary of the work done and of the results obtained in 1912. The total number of children examined in the Schools was 3,927 (123 more than in 1911), made up of 2,227 entrants, and 1,700 leavers. Amongst these 3,927 children, 630 were found to have defects requiring medical attention. The principle defects being naso-pharyngeal troubles (adenoids, enlarged tonsils, etc.), 217; defective vision (leavers only), 165; squint, 34; diseases of the ear and deafness, 35; lung diseases—phthisis, 24; doubtful phthisis and bronchitis, 44; tuberculosis of bones, glands, etc., 13; at the end of the year, of these 630 children, for whom medical attention was deemed necessary and advised, 309 or not quite half had received treatment, and 321 were still without it; in the case of the latter, arrangements were being made for some to obtain the requisite treatment early in the current year; in the

case of others the doctors consulted, advised delay, or in some cases no treatment (about the relative urgency of treating adenoids, for instance, there is unfortunately considerable difference in professional opinions), and some vision cases (leavers only) quit the Schools soon after the inspection and pass out of our ken; but allowing for these, there remain some 25 to 30 (if not more) *per cent.* for whom the parents took no steps whatever to obtain advice and treatment. This apathy on the part of the parents is most discouraging to the School Nurses when following up "the cases," often it is due to inability to realize the potential danger of leaving what the parent often ignorantly regards as a trivial defect, unremedied.

311 children were specially examined to determine their relative claims to, and fitness for, admission to the Open-Air Schools, at Clare House and Colman Road. 296 were deemed likely to derive benefit; 128 (64 boys and 64 girls) actually attended, 33 boys and 23 girls for 27 weeks, and 29 boys for 14, and 35 girls for 13 weeks, the remainder for short periods only. The average increases in weight and height for the total number was, boys 3·1 lbs. and ·4 inches; girls 3·4 lbs. and ·8 inches. The most striking beneficial results were obtained in the known and the suspected tuberculous, 5 known phthisical boys and girls being cured and 33 improved, whilst 7 doubtful cases were restored to complete health and 5 improved. 877 children were seen at my offices (sent up by Teachers, Attendance Officers, and Health Visitors), to determine their fitness either to remain at, or to be admitted to the Schools. 45 candidates for pupil-teacherships were specially examined and in 5 cases certificates were withheld pending the remediation of defects of vision or of teeth. Mentally defective children (Quay Side Special School) were systematically inspected and 28 of them examined as to fitness for transference to other Schools. A visiting Teacher calls to instruct crippled children in their homes. Ringworm continues to be the cause of loss of attendance at, and interruption with education in the Schools. 267 cases coming under notice, 129 of the head, and 80 of the body. At the end of the year 64 were still under treatment.

At the Dental Clinic 863 damaged permanent teeth were rendered sound, and 4,361 teeth extracted. Some interruption of the work occurred owing to a change in the dental officer. The vast majority of the children seen make no use of tooth brushes, and systematic cleansing of the teeth is little practised.

Dr. Allen made a special inquiry into the physical condition of boys the ages of 13 and 14 employed out of school hours, as compared with boys of the same ages not so employed. He found the former more defective physically, poorer clad, and much more subject to adenoids, and generally poorer in nutrition--due doubtless to relative poverty.

The feature specially marking the year was the occurrence of the Flood, in the last week of August, the total effect of which upon the healthiness of the people will be more accurately estimated a year hence than for the period relating to the four last months of 1912. When this estimate is made I think it will be found that a real increase in throat and respiratory troubles has taken place among the affected population--children, for instance, suffering largely from coughs, etc., due doubtless to dampness of the houses; but of any traceable infectious disease there has been relatively little; possibly rather more Phthisis (tuberculosis of the lungs) may result than has been customary; but inquiry among the doctors reveals, as was to be expected, no incidence of rheumatic trouble, etc., attributable specifically to the Flood. Very few doctors now-a-days attributing this group of ailments to dampness (more usually it is due to diet), though aggravation may occur, due doubtless to the generalized depression chronic damp induces. Of the work which fell directly upon myself and my colleagues, the following excerpt from an article I wrote for a professional journal ("Public Health") gives a very good summary:—

“Over an area involving 2,500 dwellings, exclusive of factories, workshops, and business premises, the flood-water spread itself, and from these dwellings numbers of the inhabitants fled, and in some cases swam, or escaped in boats.

In many instances, whilst older members of a family remained in occupation of the bedrooms (the lower floors being all awash with water), the children were sent away in boats, etc., to the houses of friends, or to the shelters. These shelters, for the most part, were schools or meeting rooms attached to places of worship. Those public elementary schools which were reasonably near to the flooded districts, but themselves unaffected, were hurriedly made available as living and sleeping quarters for refugees of all ages and sexes. Fires were lighted, food in generous plenty provided, and blankets obtained to furnish some covering. With this side of the emergency work carried out by the Corporation, through its Flood Committee, except as an *ex-officio* member, I was not directly concerned. It was admirably organized. Nor is it needful for me to recount the heroic, the tragic, and the comic incidents which characterized this never-to-be-forgotten flood. In place thereof I will give a brief abstract and chronicle of the emergency work which fell to the lot of the public health department.

“At the first meeting of the Flood Committee I was invited to take command of all State and other medical measures that might be needed to meet the emergency, and was constituted a sub-committee *sole*, given a free hand, and accorded full authority to engage such help as I deemed necessary, and to take such administrative measure as seemed desirable—to myself.

“In over a score of shelters there were collected, in numbers, varying from scores to hundreds, refugees with nothing but what they had upon their persons. It was necessary immediately to establish an organized service. I knew that if I made proclamation of my wants I should get scores, probably hundreds, of, for the most part untrained, however willing, helpers. I knew also that, in the circumstances, I should be pretty certain to get confusion, and be fortunate if I escaped chaos. I went direct from the Com-

mittee to the Officer Commanding the 2nd East Anglian Field Ambulance (Lt.-Col. Stacy) and secured his help; all the more readily because I am myself a Major in the R.A.M.C. (T.) S.S. Within three hours he had mobilized his men, and detachments varying from four to sixteen in number with stretchers, etc., had been sent to the shelters. At these shelters class-rooms were converted into temporary hospitals, and in these many scores of temporary illnesses, fits, faintings, bruises, and minor injuries were treated; the more serious cases being transferred to the hospitals and the Union Infirmary. To secure relays of doctors, on call, night and day, was easy; the members of the medical profession proffered their gratuitous services so readily. They responded to the calls made upon them with great generosity. I added such women nurses, amateur and professional, as the circumstances called for, and was thus enabled to establish a working, and, as experience proved, an efficient organization practically immediately. I made rounds of all the shelters at night, and also in the mornings, and was thus enabled to keep in touch with everything. As in private duty bound, I must here make special mention of the invaluable aid given by my two assistants, W. L. Goldie, F.R.C.S., and Jno. Allen, M.B., the former and senior of whom, who fortunately for me, was in the city from the outset, helped most assiduously, as did the latter directly he got back from his holiday. These two officers took charge during the latter portion of what I will call the shelter period (the last refugee left on October 3rd) of the schools, used on either side of the river, one taking the north, and the other the south bank shelters. The Health Visitors (4) paid daily visits to the shelters and were very helpful in getting babies properly fed and tended, children bathed, heads cleaned, etc., etc. It is not possible definitely to say how many people were in the shelters the first (Tuesday) night—the men in charge estimated the number at 3,000)—a number of the adults finding that the flood was subsiding went back to their homes next morning, the bed-

rooms being usable, and left their children in the shelters; but on the Wednesday night there were well over 2,000, and September 11th (sixteen days after the flood), a special computation showed that there were then 1,393 at all ages—but children chiefly. As the number of refugees lessened, the less satisfactory shelters were closed, and their inmates transferred to the better ones, or new ones were opened. In the latter part of the time, elementary schools alone were used, and their division into class-rooms enabled not only the sexes, but also the children, to be separated; whilst the central halls provided excellent feeding places. In these also concerts were held and entertainments given, and a quite delightful amount of kindness exhibited. Norwich, in fact, rose to and satisfied every requisition of the situation. She very properly can be proud of her citizens."

The foregoing does not incorporate the special emergency work done by the Chief Inspector (Mr. Brooks) and the inspectorial staff. This, summarized, included inspection of and reporting on flooded houses, with assistance of augmented staff; an emergency report to Flood Committee and recommendations (approved) to supply and distribute soap, scrubbing brushes, dwiles, firelighters and coal to some 2,500 houses. Owing to the flood, refuse waggons, etc., could not for two days be used, but on the Thursday these, supplemented by others commandeered for the purpose, worked daily early and late, including Sunday. The shelters were visited daily and disinfections effected where needed, and arrangements later were made to have sleeping blankets disinfected and returned. The Chief Inspector divided up the flooded areas in districts containing about the same number of dwellings for valuations to take place of damage to furniture, etc., by the staff of valuers engaged by Mr. Gould, and by so doing facilitated greatly the organization of that service.

The subsidence of the flood brought into prominence the urgent need not only of dealing with the recently flooded houses, but the whole question of housing in Norwich, especially in the flooded areas. In the endeavour to promote what I regard as the

first requisition of a healthy dwelling, viz., dryness, the Health Committee required owners of houses to provide these with floors impervious to fluid, and usually to cement the walls with a damp-proof composition to a height of three feet, or to insert a damp course, as well. My recommendation was that in houses without a "damp" course the owners should be required to insert one satisfactory to the Committee; but having been advised that lining the walls with a composition of cement and "Ceresit" would effectually prevent the interior surfaces from being damp, the Committee proffered that alternative to owners, and in practically all cases, being the cheaper, it has been adopted. A Special Committee of the Council was appointed to consider the desirability of clearing certain sites and carrying out improvement schemes, and for its information I was asked to, and did, submit representations as to the character of the housing on several areas. The recommendations of this Committee and the action thereon taken by the Council will be made known in due course; for the present I do not think I need, or profitably can, discuss them here. Next year it may be possible to state both the "Something attempted" and the "Something done." Meanwhile much "flood" work has been, and still is being, carried out in individual dwellings, the requirements of the Health Committee having been complied with in 1,100 houses at the end of 1912.

Housing and Town Planning Act, 1909. Under this Act official representations were made by me of unfitness for habitation of 66 houses, and unofficial ones of many others. 132 houses were closed, 43 by official orders, and 70 without these, and 19 houses were demolished. A number of the foregoing houses doubtless will be re-opened when repaired to the satisfaction of the Health Committee—the executive authority. The procedure adopted is representation by the M.O.H., then visitation of the property by the Committee, which body determines whether the dwelling shall be permanently closed, after, as required by law, the owner has been permitted to proffer alterations and reparations. Satisfactory solution of the housing problem, in my judgment, only will be

practicable when Parliament embodies in an Act a definite minimum standard of requirements for dwellings, to which standard Local Authorities will have to conform. In this, as in other old cities, interminable trouble arises over the absence of "damp" courses. Without a "damp" course houses are liable to recurring dampness of their walls. Ground floors, too, need to be constructed of material impervious to damp, or to have layers of concrete laid below them, and a ventilated air space provided between this and them.

Infectious Diseases.—From an epidemiological standpoint, the year under review has been characterized by a lessened amount of Scarlet Fever, Diphtheria, and Enteric Fever, as compared with 1911. The difficulty we have chiefly to contend with, in dealing with Scarlet Fever, is uncertainty as to real originating cause, and as is the case also with Diphtheria, the mildness of a number of the attacks, which mildness constantly gives rise to overlooked and "missed" cases. A mild attack of nasal Diphtheria, for instance, repeatedly is deemed to be an ordinary "cold," and its real character only is discovered after the occurrence of other cases, and as the result of swabbings taken from the "missed" case and contacts. For the first time I have to record no Puerperal Fever; on the other hand, there was more Erysipelas notified. Measles, Whooping Cough, and Diarrhœa were all much less prevalent and fatal than in 1911; there were 2 more deaths attributed to Influenza; 14 more to malignant growths (Cancer, etc.); and 7 less to septic diseases (other than those specified). On the whole an encouraging record.

A detailed report on the treatment carried out at the Isolation Hospital is incorporated, and should interest those people who think the treatment of Scarlet Fever and its complications a trivial matter, in place of being, what it actually is, a very troublesome burden. The average number of patients in the Hospital was 61; the average stay of a patient (all diseases) 33·8 days; the average number of the nursing staff (including the Matron and Home

Sister) 22·5 ; and of the indoor domestic staff 14·5. The observation cubicles erected in the large Scarlet Fever wards have proved very helpful.

The Local Government Board, using the phraseology peculiar to Government Departments, asks the M.O.H. to give "definite general" information respecting "the methods of control of Tuberculosis" in his district, number of cases notified, "action taken in respect of known cases and deaths," amount of hospital accommodation "for advanced and for earlier cases of disease," etc., etc. Well, in this picturesque and most seductive City the methods of control—to which our rates but not my will consents—remained virtually restricted to the giving of sage counsel to the community and sapient advice to the sufferers ; to the remedying, where practicable, of unfavourable conditions in the home, or work place, and to disinfection of the abode vacated by the victim, after Pale Death has raised the Beckoning Finger, which, sooner or later, will summon us all.

Since January 1st, 1912, the notification of Phthisis has been obligatory, and this obligation is fairly generally complied with. (Since the 1st of February this year the notification of all forms of Tuberculosis has been made obligatory). Holding, as I do, that there are very good grounds for believing that only in a minority of the cases of Phthisis is the primary source of infection the lungs, I am hopeful that by attracting attention to other forms of the disease we may arrive at a better understanding of the origin of all varieties: whilst thoroughly in agreement with the desirability of not permitting Tuberculous sputum, for instance, to become dried into dust, in my own mind I think the danger to the public of such dust is greater from its contaminating foods, than from possible inhalation into the lungs.

During the year 331 notifications of Phthisis reached me, 126 from private practitioners (one transferred to another district), 29 from the School Medical Inspector, 96 from Poor Law Medical Officers, and 80 from the Hospitals (14 transferred to other districts); 273 Inspection sheets were made out upon which

information was obtained respecting 221 cases. Of these 221, 59·27 per cent. were males and 40·73 per cent. females; 4·07 per cent. were under 5 years of age, 7·69 per cent. between 5 and 10 years, 7·24 per cent. between 10 and 15 years, 28·95 per cent. between 20 and 25 years, 33·04 per cent. between 25 and 40 years, and 19·01 per cent. over 40 years of age. [It will be noticed that nearly 20 per cent. were under 15 years of age]. 6·33 per cent. of the dwellings had *only one bedroom*, with an average population of 3·7 persons, 38·92 per cent. had two bedrooms with an average population per bedroom of 2·2 persons, 47·06 per cent. had three bedrooms, with an average population per bedroom of 1·7 persons, 5·88 per cent. had 4 or more bedrooms, with an average population of 1·6 persons per bedroom, and 1·81 per cent. were common lodging houses. 16·0 per cent. of the houses were damp. *38 per cent. of the patients had no separate bedroom.* 41 per cent. of the patients had a family history of tuberculosis. As to occupations, 55 of the 221 reported upon were engaged in boot work, 38 were School children, 20 housewives, 14 labourers, 7 followed no occupation, and the remaining 97 were distributed over 59 callings. (The details of the census not being yet issued, I am unable to give the total numbers engaged in the various occupations).

As in previous years, a number of Poor Law cases went into the Union Infirmary for varying periods, and having got patched up, came out, sooner or later to repeat the process—with a diminishing return to active life. Some cases we got helped by the Sick Poor Society (with milk) and some through the C.O.S. The provision of “Sanatorium Benefit” under the National Health Insurance Act was of real help to the insured tuberculous in the latter part of the year.

When a case of Tuberculosis is notified the dwelling is reported upon carefully, *i.e.*, the number of bedrooms, and of their occupants, relative dampness or dryness, amount of light and sun, ventilation, etc.; and enquiries are made as to the family history, occupations of the inmates, health of the other members of the household;

and advice is given as tactfully as possible. The Health Department does its best to get defects remedied and the home conditions improved, with, on the whole, tolerable success.

There were 131 deaths registered from Phthisis, and 55 from the other tuberculous diseases. Of the deaths from Phthisis 4 took place in the Norfolk and Norwich Hospital, 1 in the Isolation Hospital, 1 in the Jenny Lind Infirmary, and 17 in the Union Infirmary. In 1912 the corresponding figures were 6, 2, 0, and 20. It is, I think, rather an under estimate, which assumes that for every fatal case of Phthisis there are not less than 3 living with definite evidence of the disease. Upon this basis at any given time, we can assume that there are between 500 and 600 cases of pulmonary Tuberculosis in the City. One-fourth of these may reasonably be regarded as curable, one-fourth as possibly curable, one-fourth capable of patchwork improvement, and one-fourth as being hopeless and, to all intents and for all practical purposes, moribund.

The effect of the National Insurance Act upon the incidence prevention, and the treatment of Tuberculous diseases cannot yet be estimated; one thing, however, is certain, and that is that sufficient subventions have not been made from the Treasury to ensure, even to the insured, the fullest benefits, to say nothing of the uninsured, and of dependents of the insured. In Norwich, for example, adequately to comply with the recommendations of the Tuberculosis Commission in the matter of providing a Tuberculosis Officer, a specially equipped Dispensary, Sanatorium and Hospital beds, etc., applying a general estimate made to a deputation of representatives of Local Authorities by the L.G.B., a sum of £5000 per annum is needed. The amount of money available in the hands of the Local Insurance Committee is under £1500. The Government proffers one half of the balance, leaving the other half to be provided from the local rates. Now, as National Healthiness is a National concern, if you think of it, the most important of our national interests, here clearly is a case for very generous Treasury treatment of Local Authorities—75 per cent., at least, of any

balance needed, over and above the amount provided by the Insurance Commissioners, ought to be proffered by the Government. What arrangements will be arrived at in the City it is too soon to say, and, as the matter at the end of the year was the subject of negotiations and conferences between the local Insurance Committee and the City Council, observations upon the points at issue obviously would be injudicious. I personally attach most importance to the appointment of a Tuberculosis Officer and Dispensary and the careful examination of the children and the treatment of them in "Open-Air" Schools. This is really preventive work, and associated with constant improvement in housing should make the need of sanatoria a diminishing one. For the adult Tuberculous combined Hospital, Dispensary, and Sanatorium treatment. It is practicable constantly to secure good food and fresh air without removal to a Sanatorium, though, of course, for the poor and badly housed, they are very helpful.

The Union Infirmary admits phthisical patients in no fixed ratio. On the 1st of January, 1912, there were in that institution 22 patients, and on the 1st of January, 1913, 25; 85 patients were admitted between these dates, making 107 in all. The greatest number of patients at any one date was 34. There were 17 fatal cases, or roughly 15·8 per cent. The Norfolk and Norwich Hospital sets aside 6 beds for the treatment of the phthisical; if we assume that these beds are divided equally between Norwich and Norfolk that gives 3 beds to each. The case which died in the Isolation Hospital was notified to have another disease.

27 notifications of *Ophthalmia Neonatorum* (specific inflammation of the eyes of the newly born) reached me during the year. In the past as much as 50 per cent. of blindness has been attributed to neglect of this preventible disease. On receipt of a notification a Health Visitor calls at the home and sees that the case is properly treated.

1,584 certificates were given to school children and workers in factories or workshops certifying to freedom from infection and fitness to resume attendance at school or workplace. Dr. Goldie

made 1,773 bacteriological examinations of cultures from swabs, 80 widal tests of blood, and 25 of sputum for tubercle bacilli in the laboratory at the Isolation Hospital. This laboratory is too small, and too remote adequately to cope with the bacteriological work I should like to have done, and whenever new Municipal Offices are provided, the provision of a laboratory as part of the accommodation needed for the Public Health Department doubtless will be accorded. In connection with preventive work in limiting the propagation of infectious ailments, I have once more to affirm the desirability of requiring *Sunday* Schools to conform to the requirements as to floor and air space enforced in Elementary week-day Schools.

Midwives' Act.—There were 18 midwives on our register last year, 9 of them for varying periods in the service of the Maternity Charity. I had only to call attention to the conduct of 3 midwives and then, I am happy to say, not to any gross carelessness. None but registered women are now supposed to act as midwives, but an unregistered woman apparently can so act provided that she does not call herself a midwife, and such an one does not appear to be amenable to control, by law, except as the possible outcome of a Coroner's inquest. I utilize the services of the Health Visitors (all certificated midwives) in making enquiries respecting still births, etc., and in reporting upon the home surroundings, bedrooms, etc., of the practising midwives.

Factory and Workshops Act.—738 inspections of these were made and 20 defects reported and remedied. 127 lists of out-workers were sent in (109 of them twice); 345 inspections of out-workers' premises were made; in 53 instances we found out-work being done in unsatisfactory premises (Section 108), the greater number of which were dealt with by verbal notices—in 3 instances only did it prove necessary to issue formal ones. Infectious illness occurred in 5 out-workers' dwellings (Sections 109-110), and in none of these were formal notices needed. The total number of registered workshops on the register was 660, and there remained 4 underground bakehouses (Section 101) in use at the end of the year.

Food and Drugs Act.—235 samples were purchased and submitted to analysis. Of these 208 were certified to be genuine and 27 to be adulterated, or 11·4 per cent. 14 of the vendors were prosecuted, and in 11 cases the magistrates convicted the sellers and imposed fines, in no case exceeding 10/- and costs, 3 cases (milk) being dismissed. 13 vendors received written cautions. 17 of the samples of milk (152) were taken on Sunday mornings. The Committee now has bacteriological examinations made of a proportion of the samples of milk taken. A large number of the samples of good milk taken contained more than the standard amount of cream (3·0 per cent.), in itself evidence that the said standard is not a high one.

The Report of the Chief Sanitary Inspector summarizes the practical sanitary work carried out during the year, and states what has been done to maintain a sanitary condition in and to improve the general state of dairies, cowsheds, milk shops, slaughter-houses, common lodging houses, &c. Mr. Brooks also enumerates the changes in the sanitary accommodation at dwellings that have been effected; and the amounts and sorts of food which have been destroyed as unfit for human consumption.

An abstract from the Census (1911) giving the total number of tenements, and tenements of less than five rooms in the City, is incorporated in this Report, as is also a Special Inquiry into the incidence of Cancer in the City during the past 20 years by Dr. Goldie, whom I have also to thank for many other services. This inquiry should, and I have no doubt will, prove very helpful for purposes of comparison with the results which will be obtained 20 years hence. The conclusions arrived at are well worthy of study.

As in private duty bound, all the members of the Public Health Department have laboured “painfully and truly” to promote (according to our lights) the welfare of the City and the well-being of its people.

(Signed)

H. COOPER PATTIN.

April 9th, 1913.

METEOROLOGICAL NOTES.

(From observations taken by MR. A. W. PRESTON, F.R.Met.S., at
Norwich).

		1912.	1911.
Barometer reduced to sea level and 32 deg. Fah., from 9 a.m. and 9 p.m. readings;—	Highest (Oct. 4th) ...	30·60	30·75 ins.
	Lowest (Jan. 6th) ...	28·72	28·60 ins.
	Mean ...	29·888	29·974 ins.
Temperature—Maximum (July 12th) ...	...	86·5	93·5 deg. (Aug. 9th)
Minimum (Feb. 3rd)	{ in screen	18·0	20·2 degs.
„	{ on grass	8·7	14·3 „ (Feb. 1st)
Mean daily maximum ...	...	56·2	57·7 degs.
Mean daily minimum ...	...	43·0	43·4 „
Mean temperature of year ...	...	49·6	50·5 „
Mean daily range ...	...	13·2	14·3 „
Mean dry bulb (9 a.m.) ...	...	50·5	51·4 „
Mean wet bulb (9 a.m.) ...	...	47·3	47·8 „
Mean dew point (9 a.m.) ...	...	44·0	44·2 „
Mean relative humidity (9 a.m.)	...	79 %	76 % „
No. of nights with	{ in screen	35	44
frost	{ on grass	95	113
Rainfall—Total fall ...	...	35 03	26·67 ins.
Above average by ...	...	9·28	0·92 ins.
Greatest fall in one day (Aug. 26th)	...	6·31	0·97 ins. (Nov. 18th)
Number of days on which rain fell...	...	225	197
Number of days on which snow fell ...	...	15	14
Wind—Prevailing direction, w., s.w., and s.	Gales on 10 days.		

Summary of the Geology of Norwich.*

The geological construction of the soil underlying the City is simple in character. The higher levels are made up of glacial beds, through which the valleys have been excavated, exposing at their margins the crag formation and chalk, while gravel and alluvial deposits occupy the lower ground. The chalk, which at Norwich is nearly 1200 ft. thick, and underlies the whole of the City, comes to the surface in the Market Place, and in other places at a similar level; but it may be reached at no great depth in all parts of the Municipal area. The order of the succession of the glacial and crag beds is shown in excavations on the sides of the high ground surmounted by Mousehold Heath, between which Heath and the City proper winds the River Wensum. Except for some layers of peat in the valley, and a bed of brick-earth over part of the higher ground (as, for example, near the Victoria Station), the soil of the City is of a porous character, and much percolation of fluid takes place through the gravels, &c., into the chalk. The general trend of the drainage of the greater portion of the inhabited area of the City is toward the Wensum.

* Compiled from information contributed by Mr. F. W. Harmer, F.G.S.

DEMOGRAPHICAL STATISTICS.

<i>Enumerated Population at the Census of 1911</i>	...	121,493
Estimated Population in the middle of 1912	...	122,479
Area in Statute Acres	... ..	7905
Density of Population (<i>i.e.</i> , number of persons per acre)	... ..	15·5
Rateable Value	... ..	£466,158
<i>Total number of Births registered in 1912</i>	...	2696
Representing a Birth-rate of	... ..	22·0 per 1000
Average Birth-rate of the 95 great towns being		24·8 per 1000
<i>Total number of Deaths registered in 1912</i>	...	1566
Representing a gross recorded Death-rate of	... ..	12·78 per 1000
* "Corrected Death-rate" for the year	... ..	11·86 „
† Average Death-rate in the 95 great towns	... ..	13·8 „
‡ Comparative Mortality Figure	... ..	891
Average Norwich Death-rate for the previous 5 years, 1907 to 1911 (inclusive)	... ..	13·8 per 1000
<i>Deaths from the seven principal Zymotic Diseases</i>	...	85
Representing a Zymotic Death-rate of	... ..	0·54 per 1000
Average Zymotic Death-rate in the 95 great towns being...	... ..	1·13 „

* The "Corrected Death-rate" signifies the Death-rate which would obtain in Norwich if the local age and sex distribution were the same as those of the country generally.

† Estimated from the Registrar-General's Quarterly Reports.

‡ Taking 1000 as the mortality figure of the United Kingdom as a whole.

The Deaths of Norwich Citizens from Zymotic Diseases included :—

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles.	Whooping Cough.	Diarrhœal Diseases.	Puerperal Fever.	Erysipelas.	Influenza.
Under 5 years of age...	7	10	0	17	4	30	0	1	0
Over 5 years of age ...	6	10	9	1	0	3	0	4	7

A glance at the above table will show how large a proportion of the deaths occurred in children *under 5 years of age*, and also how great a number of these succumbed to Measles and Diarrhœal Diseases.

The deaths under one year of age numbered 277, representing a death-rate of 2·2 per 1000 of the population at all ages.

The Infant Mortality Rate (i.e. the proportion of deaths under one year of age to every 1000 births) was 102·7
In the 95 great towns it averaged ... 100·7

This return for Norwich is less favourable as compared with the 95 towns than was that for last year, when the figures were 135·25 and 140·25 respectively. A special report differentiates the certified causes of death of the infants.

Death-rate from Diarrhœal Diseases up to 2 years of age (inclusive) per 1000 births 9·6, for 95 great towns (average) 10·9.

The Death-rate per 1000 living between the ages of 1 and 65 years was 6·1. In the 95 great towns it was 8·0 per 1000 living.

The Death-rate per 1000 living at and over 65 years of age was 81·5. In the 95 great towns the corresponding rate was 99·3.

Gross recorded Number of Deaths from all causes.

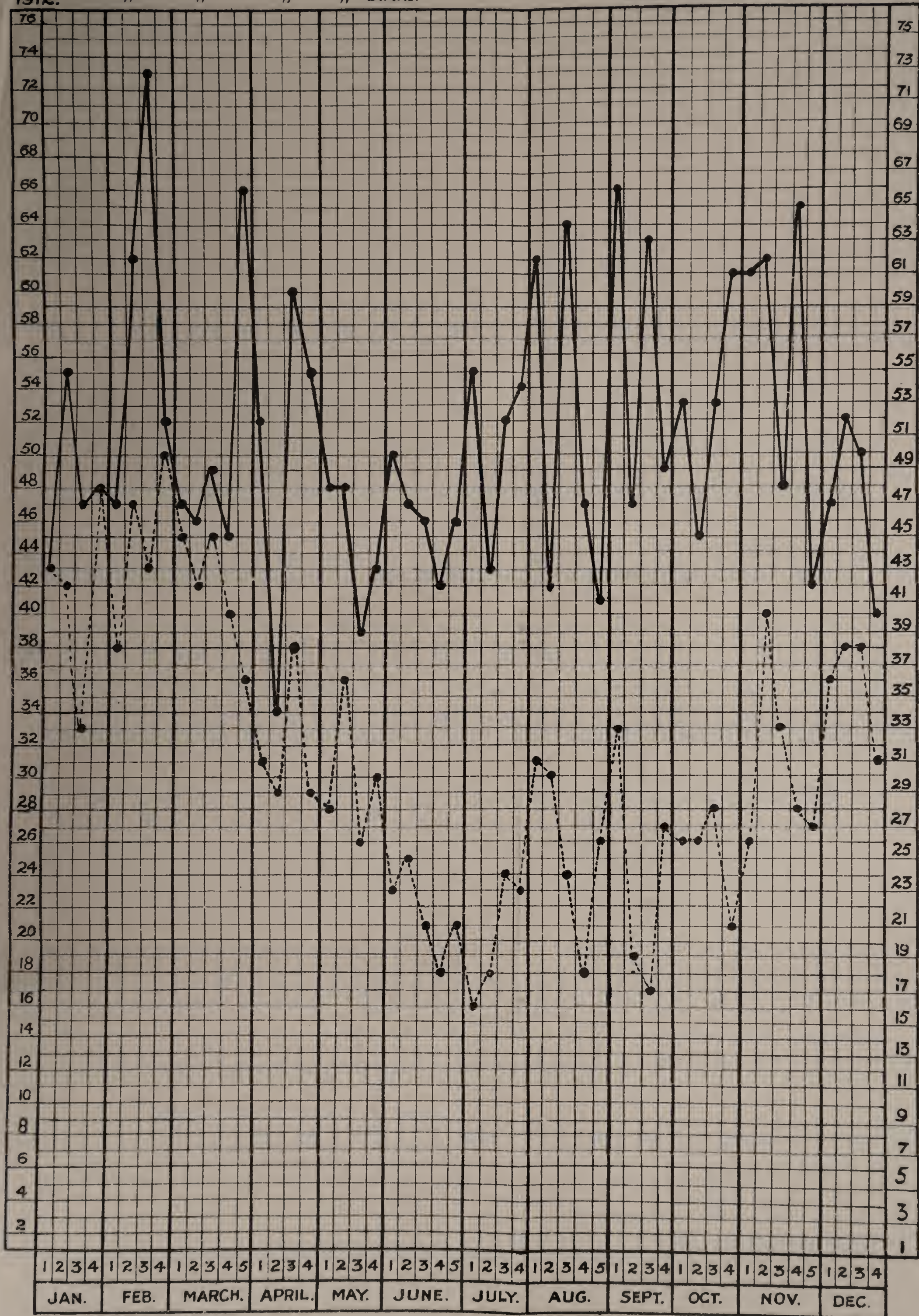
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1912.

Births.

Black Lines ———

1912.



INFANTILE MORTALITY DURING THE YEAR 1914.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.		Under 1 Week	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under one Year
All Causes	(Certified ...	65	14	11	11	101	43	25	17	11	17	14	10	13	5	7	6	269
	(Uncertified ...	8	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	8
Common Infectious Diseases (6)	Small-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chicken-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles ...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	1	4
	Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diphtheria: Croup ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoeal Diseases (25)	Whooping Cough ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	2
	Diarrhoea, all forms ...	1	...	1	...	2	2	1	...	3	1	1	...	1	1	1	...	13
	Enteritis (not Tuberculous) ...	...	1	...	1	2	1	...	...	...	1	2	1	...	...	...	...	7
	Gastritis, Gastro-intestinal Catarrh ...	...	...	...	1	1	1	1	...	...	...	...	...	1	...	...	1	5
	Premature Birth ...	49	7	5	2	63	5	4	1	...	1	1	1	...	...	...	...	75
Wasting Diseases (128)	Congenital Defects ...	8	...	2	...	10	2	...	2	...	...	...	...	...	...	...	...	14
	Injury at Birth ...	4	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4
	Want of Breast-Milk ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Atrophy, Debility, Marasmus ...	7	4	1	2	14	8	6	2	2	2	...	...	...	...	...	1	35
	Improper Feeding ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculous Diseases (13)	Tuberculous Meningitis ...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	3
	Tuberculous Peritonitis } Tabes Mesenterica }	...	...	...	...	...	...	1	...	...	2	1	1	...	...	...	...	5
	Other Tuberculous Diseases }	...	...	...	...	...	...	...	2	...	1	2	...	...	...	...	...	5
	Erysipelas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Syphilis ...	...	...	...	1	1	1	1	1	...	...	1	1	...	...	...	...	6
Meningitis (not Tuberculous)	Rickets ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Meningitis (not Tuberculous) ...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	2
	Convulsions ...	4	2	1	2	9	3	2	2	3	...	2	...	3	1	1	...	26
	Laryngitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Bronchitis ...	...	...	...	...	...	6	3	3	1	1	...	2	2	...	...	...	18
Pneumonia	Pneumonia ...	...	...	...	1	1	1	2	...	...	1	...	1	1	2	...	...	9
	Broncho-Pneumonia ...	...	...	...	...	...	7	2	2	1	4	3	2	4	...	3	1	29
	Suffocation, overlaying ...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	3
	Other causes ...	...	...	1	1	2	3	1	1	1	2	...	...	...	...	...	2	12

		73	14	11	11	109	43	25	17	11	17	14	10	13	5	7	6	277

DIFFERENTIAL WARD STATISTICS.

WARDS.		DEATHS.							DISEASES.									
		At all ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and over.	Premature Birth.	Diarrhoea.	Other Zymotic.	Phthisis.	Other Tuberculous.	Respiratory.	Cancerous.	Cirrhosis.	Circulatory.
EAST WYMER.	BER STREET	100	27	5	1	5	11	21	30	7	1	3	15	1	25	5	—	15
	CATTON ...	90	22	8	2	4	10	15	29	4	—	3	13	3	16	8	—	13
	CONESFORD	74	14	4	1	—	4	10	41	5	2	—	2	—	12	7	3	24
	COSLANY	80	21	9	1	3	9	13	24	4	1	4	6	3	12	6	1	15
	FYE BRIDGE	63	13	7	3	3	2	14	21	3	2	—	5	3	14	7	—	14
	MOUSEHOLD	146	41	12	2	3	20	23	45	13	4	5	15	6	30	9	1	26
	THORPE	73	15	3	2	6	10	17	20	5	1	3	12	1	7	8	1	14
	EATON (a)	130	27	14	9	7	9	26	38	10	1	3	14	7	16	12	2	24
	EARLHAM (b)	264	7	24	18	14	29	51	121	1	1	33	23	9	33	24	1	55
	HEIGHAM	87	31	10	1	1	5	16	23	12	—	5	4	4	14	6	—	14
WEST WYMER.	LAKENHAM	104	18	6	3	3	12	19	43	6	1	5	6	2	19	14	1	21
	MANCROFT	28	—	1	2	—	2	7	16	—	—	1	1	1	4	3	—	9
	NELSON ...	71	7	—	—	3	3	17	41	1	1	—	4	1	9	5	1	25
	TOWN CLOSE (c)	193	14	5	17	24	32	50	51	3	2	7	8	6	16	28	1	29
	WENSUM	38	4	3	2	4	2	6	17	—	1	1	6	—	7	2	1	10
	WESTWICK	69	16	3	—	—	5	14	31	1	2	1	1	2	20	3	1	13

- (a) Includes Jenny Lind Infirmary.
(b) Includes Union Infirmary and Isolation Hospital.
(c) Includes Norfolk and Norwich Hospital.

There were 110 more male than female children born in the City during the year; 139 of the births were children known to be illegitimate. There were 22 deaths under one year of age of *illegitimate* children, or 158 per 1000 *births*—the rate among the *legitimate* children being 99 per 1000 *births*; 84 stillbirths were notified to me during the year.

NORWICH SPECIAL DEATH-RATES FOR 1912.

	Per 1000 of the population at all ages 1912.	In 1911.	In 1910.
From all Tuberculous Diseases ...	1·5	1·7	1·6
„ Tuberculosis of the Lungs (Phthisis)	1·0	1·1	1·0
„ Respiratory Diseases, excluding Phthisis	2·1	1·4	1·7
„ Heart and Circulatory Diseases	2·5	1·7	1·6
„ Scarlet Fever	·106	·17	·09
„ Diphtheria	·16	·17	·14
„ Enteric (Typhoid) Fever ...	·07	·08	·23
„ Puerperal Fever	·00	·016	·007
„ Erysipelas	·40	·03	·02
„ Measles	·14	·46	·06
„ Whooping Cough	·03	·19	·15
„ Diarrhoeal Diseases	·26	·47	·20
„ Influenza	·05	·01	·11
„ Alcoholism	·11	·05	·13
„ Venereal Diseases	·06	·01	·03

The following Deaths occurred in *Public Institutions*:—Norfolk and Norwich Hospital, 151; the Union Infirmary, 147; the Isolation Hospital, 36; Jenny Lind Infirmary, 23; the Prison, 1; the Barracks, 1.

Inquest cases amounted to 7·98 per cent. of deaths from all causes.

In the 95 great towns the average was 8·4 per cent.

Deaths in Public Institutions amounted to 22·9 per cent.

In the 95 great towns the average was 28·5 per cent.

Uncertified deaths (i.e.) death certificate not signed by a registered medical practitioner) amounted to 0·5 per cent.

Average in 95 great towns, 0·8 per cent.

8 of the deaths of infants were certified—neither by a medical practitioner nor by the verdict of a Coroner's jury. All of these deaths occurred within the first week of life; assigned causes, "Want of Vitality," 5; and "Premature Birth," 3.

It is not creditable to the State, as the Guardian and Conservator of the prospective interests of the race, to lose a single subject without being furnished with a certificate of the cause of death, properly attested. The law now allows a Registrar, almost always a layman, to accept a certificate from an unqualified person, provided that he, the Registrar, is persuaded that deception is not being practised. The proper course is, without doubt, to hold an inquiry in every such case, and, where needful, a post-mortem examination. These steps will probably be taken only when the registration of the cause of death is placed under the control of the Sanitary Authority.

I caused enquiries to be made in 253 special cases whether the *child dying under one year of age was insured*, and found that 26 per cent. of these children were insured.

There were 17 inquests held upon children under one year of age by the Coroner or his Deputy, 5 of these children being illegitimate.

Of the 22 deaths of illegitimate infants, 4 were certified to be due to Diarrhœal Diseases, 3 to Lung Diseases, 4 to Premature Birth, 1 to Marasmus, 2 to Asthenia and Debility from Birth, 1 to Atelectasis, 1 to Congenital Syphilis, 1 to Cirrhosis of Liver, 1 to Want of Vitality, 1 to Accident due to Scalds, 3 to Convulsions.

ISOLATION HOSPITAL.

The total number of admissions to the Hospital for the year 1912 was 629 as compared with 858 in 1911, 825 in 1910, and 698 in 1909.

This number with 101 patients remaining in Hospital on December 31st, 1911, gives a total number of 730 under treatment during the course of the year.

The 629 cases admitted were suffering from the following diseases :—

Scarlet Fever	...	...	...	306
Diphtheria	...	...	...	216
Enteric	..	...	...	22
Coexistent diseases		...	...	13
Other diseases	...	...	...	72

The total number of deaths was 35 (giving a general death rate of 4·8 per cent.) distributed as follows :—

Scarlet Fever	...	...	...	12
Diphtheria	...	...	...	16
Enteric Fever	...	...	...	5
Other diseases	{ Rheumatic Fever 1 Phthisis 1 }			... 2
Total				... 35

On December 31st, 1912, there were 31 patients remaining in Hospital, viz. :—

Scarlet Fever	...	...	...	15
Diphtheria	...	...	...	13
Coexistent Infections		...	...	1
Other diseases	...	...	...	2
Total				<hr/> 31

The average daily number of patients in Hospital was 61 (maximum 118, minimum 18). The average length of stay in Hospital (all diseases) was 33·8 days.

TABLE I.

(Showing disease distribution and mortality all diseases).

	Remaining in Hospital Dec. 31st, 1911.	Admitted 1912.	Total.	Discharged 1912.	Died 1912.	Mortality Rate.	Remaining in Hospital Dec. 31st, 1912.
Scarlet Fever...	83	306	389	362	12	3.20	15
Diphtheria	17	216	233	204	16	6.95	13
Enteric ...	1	22	23	18	5	21.73	...
Coexistent Infections	...	13	13	12	...	...	1
Other diseases	...	72	72	68	2	2.85	2
Total ...	101	629	730	664	35	4.8	31

TABLE II. (Showing Monthly Admissions).

	Scarlet Fever.	Diphtheria.	Enteric.	Coexistent Infections.	Other Diseases.	Total.
January ...	44	36	4	3	2	89
February ...	58	21	1	1	5	86
March ...	32	20	1	1	2	56
April ...	41	10	3	1	2	57
May ...	41	8	3	1	2	55
June ...	13	9	2	3	12	39
July ...	16	22	1	1	5	45
August ...	13	21	3	1	12	50
September ...	17	18	2	--	7	44
October ...	13	19	1	—	5	38
November ...	5	19	1	—	15	40
December ...	13	13	—	1	3	30
Total ...	306	216	22	13	72	629

Scarlet Fever.

306 cases were admitted during the year, which, with 83 remaining in Hospital on December 31st, 1911, gives a total of 389 under treatment.

15 cases remained in Hospital on December 31st, 1912.

12 deaths occurred, giving a mortality of 3·2 per cent., compared to 3·1 in the previous 12 months.

The youngest patient admitted was aged 7 months; the oldest 44 years. The average stay in Hospital was 39·5 days, as compared with 41·05 days in 1911.

Complications.

Rhinorrhœa	...	...	67	
Otorrhœa	...	...	43	<div> Rt. 16 Lt. 11 Double 16 </div>
Albuminuria	...	...	30	
Hæmaturia	...	...	4	
Adenitis	...	...	45	
„ (Abscess)	...	...	11	
Rheumatism	...	...	15	
Pancreatitis	...	...	2	
Serum Rash	...	...	8	
Blepharitis	...	...	3	
Septic Fingers	...	...	5	
Herpes	...	...	4	
Psoriasis	...	...	1	
Relapse	...	...	4	
Cancum Ovis	...	...	1	
Tonsillar Abscess	...	...	1	
Pneumonia	...	...	2	
Purpura (Henoch's)	...	...	1	
Chicken Pox	...	...	7	
Rubeola	...	...	4	

“Return Cases.”

The number of “return cases” traced was 9, giving a rate of 2·3. In two cases the return case occurred in the first week after discharge, in 3 in the second, 2 in the third, and the remaining 2 in the fifth week.

TABLE III (age and sex distribution).

Scarlet Fever.

	M.	F.	Under 1.	1-2.	2-3.	3-4.	4-5.	5-10.	10-15.	15-25.	25 & over.	Tl.
<i>Admis- sions</i>	142	164	2	16	21	18	42	132	47	18	10	306
<i>Deaths</i>	6	6	—	3	—	4	—	5	—	—	—	12

Diphtheria.

216 patients suffering from this disease were admitted, which, with 17 cases remaining over from last year, total 233 cases under treatment. The deaths numbered 16, giving a percentage mortality of 6·95 as compared with 7·4 last year.

13 cases remained in Hospital on December 31st, 1912.

The youngest patient admitted was aged 12 months; the oldest 42 years. The average stay in Hospital was 28·1 days as compared to 29·51 in the previous year.

The cases admitted included 6 in which the infection was Laryngeal, and 1 in which the Conjunctiva was the seat of disease.

Complications.

Albuminuria ...	...	...	49
Antitoxin Rash ...	...	...	36
Adenitis ...	...	...	1
Do. (abscess) ...	...	...	1
Epistaxis ...	...	...	10
Paralysis (Palatal) ...	...	...	13
„ (Ocular) ...	...	...	2
„ (Generalised) ...	...	...	1

TABLE IV. (age and sex distribution).

Diphtheria.

	M	F.	Under 1.	1-2.	2-3.	3-4.	4-5.	5-10.	10-15.	15-25.	25 & over.	Tl.
<i>Admissions</i>	99	117	—	5	7	8	21	98	53	18	6	216
<i>Deaths</i>	7	9	—	1	1	3	3	5	3	—	—	16

Enteric Fever.

22 cases were admitted during the year, and 1 case remained in from 1911. Of those admitted 13 cases proved to be Typhoid and 9 Paratyphoid. 5 deaths occurred giving a mortality rate of 21·73. The average time in Hospital was 37 days as compared to 36·5 last year.

Complications.

Albuminuria	...	...	8 cases.
Hæmorrhage	...	...	3 „
Relapse	...	...	2 „
Alopecia	...	...	2 „
Pneumonia	...	...	1 „
Parotitis	...	...	1 „

TABLE V. (age and sex distribution).
Enteric Fever.

	M.	F.	0-5.	5-10.	10-15.	15-20.	20-25.	25-30.	30-35.	35 and over.	Tl.
<i>Admis- sions</i>	6	16	1	1	7	3	2	3	1	4	22
<i>Deaths</i>	2	3	—	—	—	1	—	2	1	1	5

Double Infection.

13 cases were admitted in which the patient was suffering simultaneously from two infectious diseases on arrival at the Hospital, or in which the second exanthem was incubating at the time of admission. They were as follows :—

Scarlet Fever and Diphtheria	...	7 cases.
Scarlet Fever and Chickenpox	...	3 „
Scarlet Fever and Mumps	...	1 „
Diphtheria and Mumps	...	1 „

Cross Infection.

Cross infection occurred this year 3 times in the wards. 7 Scarlet Fever patients contracted Chicken Pox and 4 Rubeola.

Other Diseases.

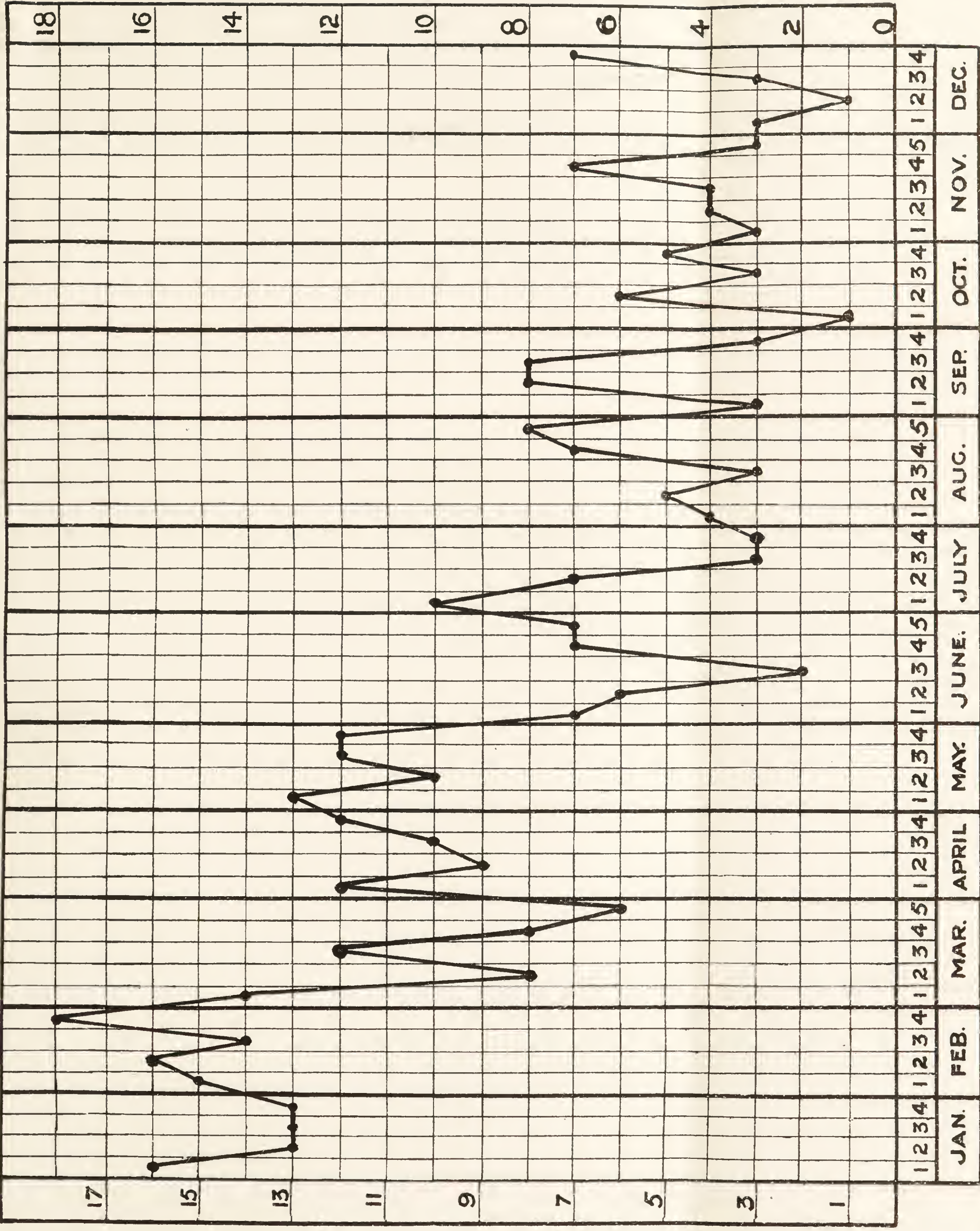
The cases under this heading numbered 72 and were as follows :—

Rubeola	...	...	39 cases.
Morbilli	...	...	4 „
Chicken Pox	...	...	2 „
Pneumonia	...	...	1 „
Tonsillitis	...	...	10 „

NOTIFICATIONS OF SCARLET FEVER.

1912

1912



Laryngitis	...	...	2 cases
Erythema	...	...	1 „
Rectal Prolapse	...	...	1 „
Rheumatic Fever	...	...	2 „
Gastro-enteritis	...	...	4 „
Influenza ...	...	...	1 „
Phthisis ...	...	...	1 „
Nephritis ...	...	...	1 „
Scabies ...	...	...	1 „
Catarrhal Jaundice	...	...	1 „
Suppurating Glands in Neck	...	...	1 „

Sick Staff.

I regret to report the deaths during the year of Robert Pointer (gatekeeper) from Sarcoma, and of Probationer M. E. Dorman from Typhoid. Four nurses contracted Rubeola and one nurse Rheumatic Fever. Several nurses and maids were warded for short periods for minor ailments such as hospital sore throat, gastric intestinal disorders, etc.

Bacteriology.

A total of 1773 bacteriological examinations were reported on during the year.

The majority of these were as usual for Diphtheria but this number includes 80 Widal examinations and a small number for suspected cases of Tuberculosis.

INFECTIOUS DISEASES.

Scarlet Fever.—407 notifications of Scarlet Fever in 389 dwellings were sent to me during the year. There were 18 secondary infections, *i.e.*, second or third cases in the same dwelling. The Chart gives a graphic representation of the prevalence, week by week, of the disease. I regard the occurrence of Scarlet Fever in a proportion over one case to every ten thousand of the population a week, or, roughly, 12 cases a week, as constituting an “epidemic” condition of the disease. There were 13 deaths.

Of the cases notified to me 45·51 per cent. occurred in males and 54·49 per cent. in females; 29·05 per cent. of the patients were *under 5 years of age*, 42·94 per cent. *between 5 and 10 years of age*, 17·73 per cent. *between 10 and 15 years of age*, 6·94 per cent. *between 15 and 25 years of age*, and 3·34 *were over 25 years of age* (72·0 per cent. of the cases occurred in children under 10 years of age).

From enquiries conducted specially I found that of the infected dwellings 6·17 per cent. possessed only *one sleeping room*, the average number of the occupants being 4·4 persons; 27·24 per cent. possessed *two sleeping rooms*, the average number of the occupants being 2·1 persons *per room*; 54·49 per cent. possessed *three bedrooms*, the average number of the occupants being 2·0 persons *per room*; and 12·8 per cent. possessed *four or more bedrooms*, the average number of occupants being 1·5 persons *per room*.

As regards the disposal of excrement, 6·17 per cent. of the infected dwellings used "bins," 6·43 per cent. "pail" closets, and 87·40 per cent. water-closets.

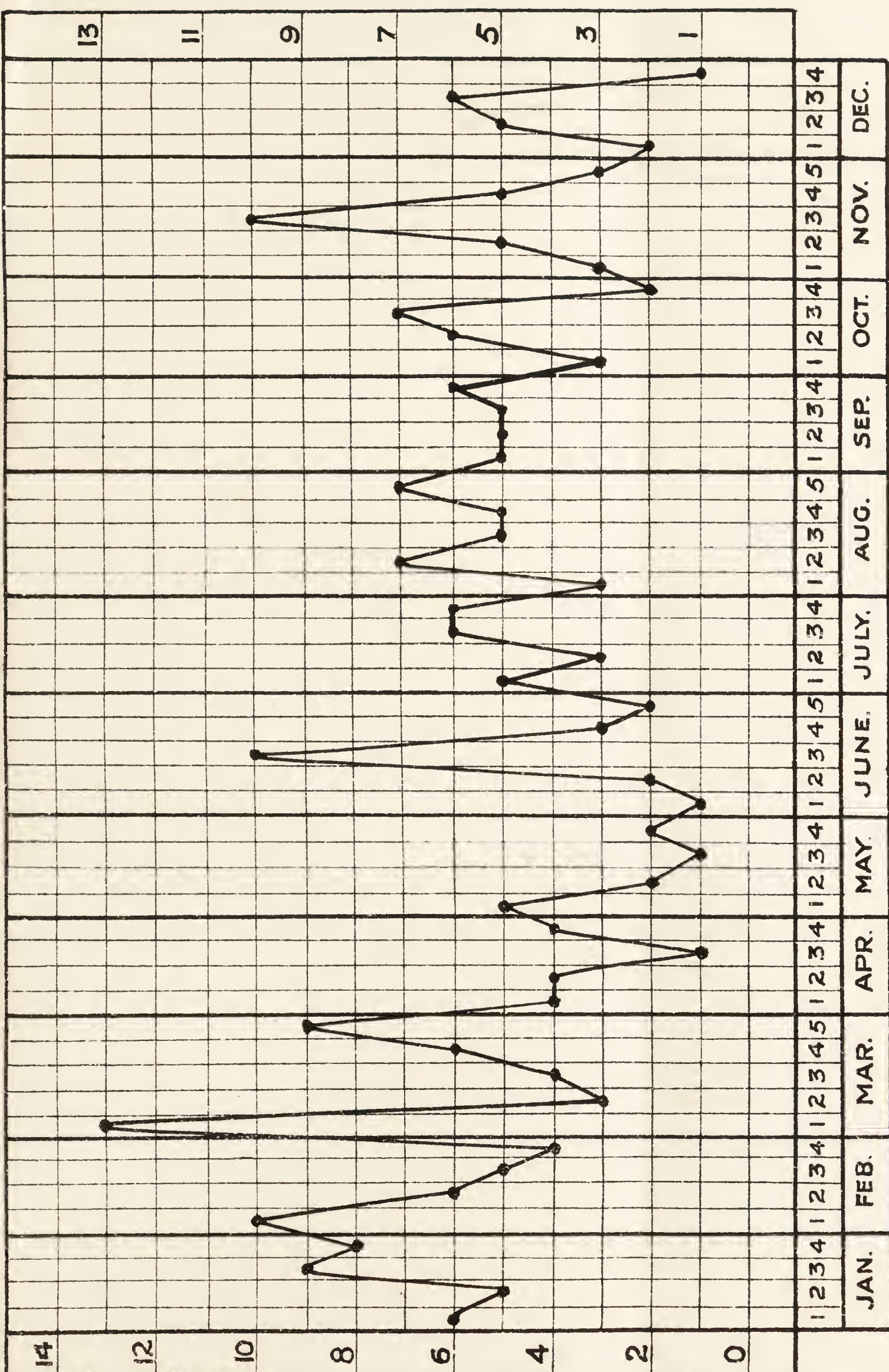
I was not able to trace Scarlet Fever to any special milk supply, and have little doubt that a great majority of the cases owed their infection to personal contact. As to the origin of this disease, we are in greater doubt than is the case with other zymotic ailments, and so long as this uncertainty continues our operations for preventing those conditions from arising which favour its development will be *pari-passu* imperfect, and our practical work confined rather to dealing with effects than causes. I am inclined to think that *all the excretions of an affected person are infectious for a time, as well as the breath*.

Diphtheria.—255 notifications were sent in during the year. There were 20 deaths recorded during the year, 1 of the fatal endings occurred in the Norfolk and Norwich Hospital, and 16 in the Isolation Hospital. The special death-rate being 1 in 12 persons attacked. In 1911 it was 1 in 12·5.

1912

NOTIFICATIONS OF DIPHTHERIA.

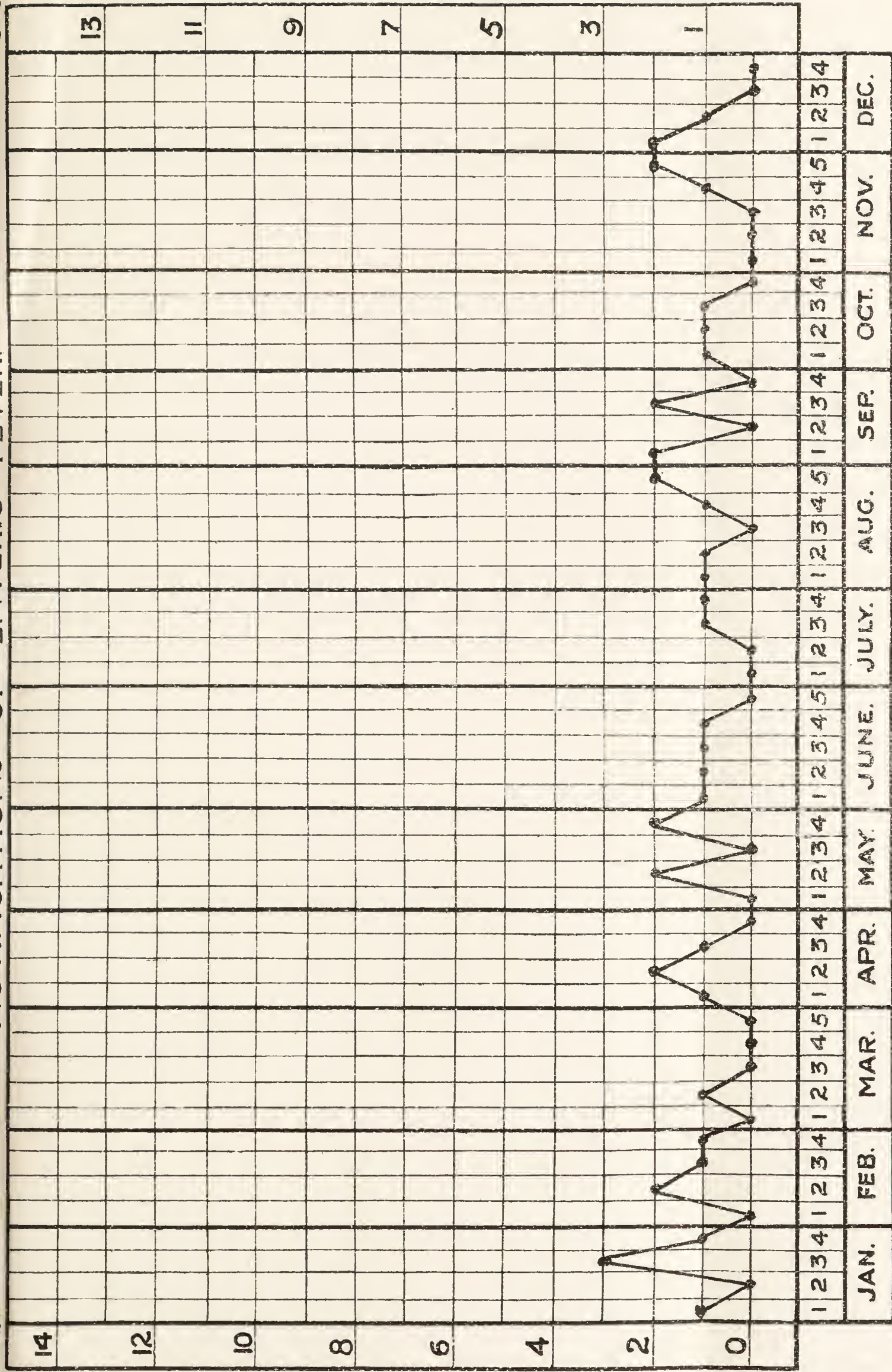
1912



NOTIFICATIONS OF ENTERIC FEVER.

1912

1912



The cases notified to me occurred in 218 dwellings—there being 37 instances of *secondary infection*, that is more than one case occurring in the same dwelling, or 1 to every 6 primary cases. Of the persons attacked, 45·8 per cent. were males and 54·2 per cent. females.

16·05 per cent. of the patients were under 5 years of age, 45·8 per cent. between 5 and 10 years, 22·93 per cent. between 10 and 15 years, 11·03 per cent. between 15 and 25 years, 4·12 per cent. over 25 year of age (62·0 per cent. *were in persons under 10 years of age.*)

Systematic enquiries into the home surroundings of the patients entitle me to state that 4·12 per cent. of the infected dwellings possessed *only one sleeping room*, the number of the occupants averaging 4·1; 23·39 per cent. of the houses possessed *two sleeping rooms*, the average number of the occupants (of each room) being 2·7; 55·52 per cent. of the houses had *three bedrooms*, the average number of occupants being 1·9; and 16·97 per cent. of the dwellings possessed *four or more bedrooms*, with an average population of 1·2 persons per bedroom. 2·76 per cent. of the affected households made use of “bins,” 6·42 used *pail-closets*, and 90·82 per cent. *water-closets*. In 22·93 per cent. of the houses there was evidences of *dampness* of the walls or flooring, and due commonly to the *absence of a “damp course”* in the former, and of a layer of concrete below the later. I caused special enquiries to be made concerning the character of the paving, etc., of the yards adjacent to the infected dwellings, and found that 85·78 per cent. had yards covered with some *material impervious to fluids*; that 4·13 per cent. had yards partly paved, 2·76 per cent. cobbled yards, and 6·88 per cent. yards *without any paving at all*. In other words 15·0 per cent. of the houses *adjoined yards offering greater or less facilities for the soakage of fluid into the soil about them*. 17·43 per cent. of the houses possessed no sinks, which means that *all household “slops,” etc., and other waste fluids would be pitched into and about the gutter in the yard.*

The Chart exhibits the variation in the prevalence of Diphtheria week by week throughout the year. I retain my belief that any condition of the atmosphere, or of the surroundings, which tends to produce a congested condition of the tissues lining the throat—such as damp, foggy weather, particularly when associated with low barometric pressure, which leads to engorgement and relative congestion of the superficial vessels; or any irritating influence—such as the noxious effluvia constantly given off by the contents of “bins, “pail-closets,” sewer air, fish and other refuse, etc.,—distinctly favours the development of Diphtheria.

Enteric (Typhoid) Fever.—48 cases were notified as Enteric Fever during the year, but 6 of the cases notified, proved on bacteriological examination, to be either paratyphoids or mistakes in diagnosis. As the relative prevalence of this disease has been commonly accepted criterion of the sanitary condition of a district, its associations and surroundings become of special interest; and the importance of the subject justifies a more detailed account than is requisite in dealing with other diseases; the more particularly as Enteric Fever has been rather *endemic* than epidemic in its character with us. The association of shell-fish with this disease locally is always to be remembered.

The following table gives the notifications of Enteric Fever in each year from 1880 to 1912 inclusive, and the mortality from the disease. There were 9 deaths registered in 1912, 8 of them in Public Institutions.

180	{ notifications of Enteric F. in }	1880 with 37	{ deaths representing a mortality rate of }	20·5 %
50	„	1881 „ 15	„ „	30·0 „
47	„	1882 „ 8	„ „	17·4 „
34	„	1883 „ 11	„ „	32·3 „
121	„	1884 „ 30	„ „	24·8 „
584	„	1885 „ 92	„ „	15·5 „
262	„	1886 „ 39	„ „	14·5 „
136	„	1887 „ 20	„ „	14·7 „
171	„	1888 „ 19	„ „	11·1 „
166	„	1889 „ 22	„ „	13·2 „

176	{ notifications of Enteric F. in }	1890 with 31	{ deaths representing a mortality rate of }	7.6 %
163	"	1891 " 21	" "	12.8 "
106	"	1892 " 19	" "	17.9 "
314	"	1893 " 36	" "	11.4 "
150	"	1894 " 22	" "	14.6 "
226	"	1895 " 24	" "	10.6 "
196	"	1896 " 20	" "	10.2 "
234	"	1897 " 33	" "	14.0 "
259	"	1898 " 48	" "	18.5 "
144	"	1899 " 20	" "	14.0 "
193	"	1900 " 12	" "	7.4 "
127	"	1901 " 15	" "	11.8 "
57	"	1902 " 5	" "	8.7 "
92	"	1903 " 5	" "	5.4 "
111	"	1904 " 15	" "	13.5 "
53	"	1905 " 9	" "	17.0 "
89	"	1906 " 11	" "	12.3 "
87	"	1907 " 14	" "	16.0 "
216	"	1908 " 36	" "	16.6 "
45	"	1909 " 5	" "	11.0 "
36	"	1910 " 3	" "	8.3 "
54 (44 cases)		1911 " 8	" "	16.0 "
48 (42 ")		1912 " 9	" "	21.0 "

It will be noticed that the death-rate in 1880 from this disease averaged 20.5 per cent. of the cases notified, or, roughly, 1 case in every 5, and that last year the death-rate was practically the same. As I pointed out in previous reports, it does not follow necessarily that these figures represent the true state of the facts ; it must be remembered that most probably a number of the milder cases of the disease were not recognised and notified in 1880. Increasing skill in diagnosing the disease in its lighter form has, in my judgment, led to a more accurate correspondence between the number of notifications sent in and the actual amount of the disease ; although I still think that a number of cases of Enteric Fever of what is known as the "Ambulatory" type escape notification, and never receive medical treatment. So that here, as elsewhere, the notifications furnish a reliable guide to the relative prevalence of the disease, but must not be regarded as representing accurately the full amount. By "Ambulatory" Typhoid is meant so mild an attack that the patient keeps walking

about, pursuing his or her ordinary vocation in life, never ill enough to need a doctor, having some feeling of malaise and what is thought to be some transient diarrhœa.

Differentiating some characteristics of the cases notified in 1912, and comparing them with those notified in 1911, 1910, 1909, I find that as regards

(a) *Sex.* 45·84 per cent. of the cases occurred in males and 54·16 per cent. in females; the average percentages of the preceding three years were 47·2 males and 49·0 per cent. females.

(b) *Age.*

				Average percentage of the preceding three years.
8·33	{ per cent. of the patients were under 5 years of age }			8·5
6·25	„	„	between 5 and 10	14·75
16·67	„	„	„ 10 „ 15	11·4
12·50	„	„	„ 15 „ 20	15·7
16·67	„	„	„ 20 „ 25	15·4
20·83	„	„	„ 25 „ 35	16·6
16·67	„	„	„ 35 „ 45	9·5
2·08	„	„	over 45	6·5

It will be noticed that nearly 35·0 per cent. of the cases occurred in children under 15 years of age, and that the average number of such cases in the preceding three years was 34·16 per cent. of the total number.

(c) *Crowding.*

				Average number of occupants per bedroom.
6·25	{ per cent. of the affected dwellings had only 1 bedroom }			4·3 persons
20·83	„	„	2 bedrooms	2·7 „
50·00	„	„	3 „	1·6 „
22·9	„	„	4 or more	1·2 „

The average corresponding percentage of the preceding three years were—1 bedroom, 7·2 per cent.; 2 bedrooms, 30·0 per cent.; 3 bedrooms, 43·15 per cent.; 4 or more bedrooms, 16·7 per cent; the relative crowding being 3·75, 2·4, 2·0, and 1·4 persons *per room*. In estimating the influence of “man-crowding,” I have only concerned myself about the number of sleeping-rooms, *the rooms in which crowding becomes important*. The census returns are helpful here only in respect of tenements consisting of one room, which room must, of necessity, be used for bed and living-room; and when it is remembered how large a proportion of these are occupied by one old man or woman living alone, the incidence of the disease in houses containing one bedroom probably is much heavier than the figures represent.

(d) *Water supply.*

All the affected dwellings were supplied with the Company's water.

Of the preceding three years the (averaged) corresponding proportions were 97·2 and 2·8 per cent. from wells.

The proportions in which houses are supplied with “pipe” or with well water are altering quietly but *continuously*; each year sees an increase in the number of houses supplied by the Company, and a decrease in the number of those drawing water from wells. I believe that at the present time over 99·0 per cent. of the houses are supplied by the Company with water. The recurrence of Typhoid makes it necessary for us to take every possible precaution with regard to water. The Water Company expends great care upon the filtration and storage of the water it supplies to the citizens, and has it chemically and bacteriologically examined at regular intervals, and short of the demonstration by bacteriological experts of the specific bacillus of Enteric Fever being distributed by the Company with the water it abstracts from the Wensum, I see no sufficient reason for dissenting from the opinion expressed by the Official Analysts that it is “a perfectly safe water for dietetic use.”

(e) *Milk supply.*

	Corresponding (averaged) proportions in the pre- ceding three years.
2.08 per cent. of the patients drank no milk	8.2
10.42 per cent. of the patients drank it in the raw, <i>uncooked</i> condition	11.4
83.34 per cent. of the patients drank it only, when first boiled or cooked in puddings or in hot tea, etc.	78.3
4.16 per cent. of the patients used con- densed milk	4.0

Milk, I think, had, as in preceding years, little to do with propagating Enteric Fever amongst us; its influence, anyway, must have been limited, for practically it is likely only to be a direct source of infection in 10.42 per cent. of the cases among the drinkers of the *uncooked* article. At the same time I am bound to say that, but for the fairly general cooking of the milk consumed among us, we are practically at the mercy of the surrounding districts; so large a portion of our supply comes from outside the City.

(f) *Shell-fish.*

The marked association of this article of diet with Enteric Fever in 1908 makes it interesting to record that in 1912, 75 per cent. of the cases admitted having consumed shell-fish prior to the attack.

(g) *Disposal of excrement.*

0.0 per cent. of the affected dwellings used "bins."	
10.42 ,, ,, ,, ,, ,,	pail closets.
89.58 ,, ,, ,, ,, ,,	water closets.

In the preceding three years the corresponding (averaged) percentages were 8.5 per cent. "bins"; 12.7 pail closets; 80.8 water closets. The change to the water carriage system progresses steadily. Last year 779 water closets were substituted for other

types of closet. At the present time I estimate the number of houses provided with water closets at 92·0, those with pail closets at 5·0, and those with bins at 3 per cent. of the total number.

(h) *Household Drainage.*

At 89·5 per cent. of the affected houses the Inspectors reported the drainage as "good." In the preceding three years the corresponding (averaged) percentage was 81·5.

Which means that in the others some defect in the drainage such as no sink (which again means that all slop and other waste water would be pitched about the yard), sink waste-pipe not disconnected, or loose and defective "traps," etc., existed.

(i) *Character of Yard.*

					Average of the preceding three years.
0·00 per cent. of the affected dwellings had					
no yard	...	...	...	...	0·2
81·26 per cent. of the dwellings had paved					
yards	...	...	...	...	61·8
8·33 per cent. of the dwellings had <i>unpaved</i>					
<i>yards</i>	...	...	...	...	20·3
6·25 per cent. of the dwellings had partly					
<i>paved yards</i>	...	...	...	...	9·45
4·16 per cent. of the dwellings had <i>cobbled</i>					
<i>yards</i>	...	...	...	...	7·2

In other words, 18·8 per cent. of the dwellings had yards more or less liable to have the *subsoil soddened with moisture and impurities*. I have drawn attention repeatedly to the importance of having the soil which adjoins a dwelling covered with some material *impervious to fluids*, else it cannot be kept dry. A number of the poorer dwellings in this City have no properly constructed "damp course" in the walls, and, in addition, have not had a thick layer of concrete laid under the bottom floors; in such

cases moistening of the subsoil must lead to dampness in the dwelling, to say nothing of the deleterious ground air which will be forced upwards by the rising of the ground-water from time to time; and always be more or less sucked into the dwelling, owing to its atmosphere being warmer.

- (j) *Food store.* 18·75 per cent. of the affected dwellings had food stored in a ventilated receptacle; and 6·25 per cent. of the dwellings had the household food stored in an unventilated receptacle (i.e., having no communication with the external air) in some part of the house, other than the living-room; and in as many as 75·0 per cent. of the dwellings the food was stored in some unventilated receptacle in the actual living-room. In the preceding three years the food store was some unventilated receptacle in the actual living-room in 76·2 per cent. of the affected dwellings.

It is worthy of notice that in 75·0 per cent. of the affected dwellings the food was stored in the living-room, and therefore in an atmosphere more or less stale and impure. Without assuming a direct connection between such food and a disease like Typhoid, it will be obvious that articles of food, such as milk, butter, bread, etc., kept in such surroundings become contaminated easily with impurities.

- (k) *Nearness to sewer gratings and gullies.*

	Average of three preceding years.			
75·0 per cent. of the affected dwellings were within 20 ft.	41·0
6·25 per cent. of the affected dwellings were within 40 ft.	15·6

The remainder were over 40 ft. These measurements were taken because a stench from a grating or gully has been charged with occasioning Typhoid, so constantly, by people living near; my own belief is that pollution of the neighbouring atmosphere with sewer air lowers the resisting powers of the body, and thus causes

those exposed to so deleterious an influence to fall more easily a victim to disease; emanations from collections of excrement in "bins" and pail-closets, and from heaps of decaying refuse, act in the like manner as powerful predisposers.

(l) *Employment, &c.*

Boot Work, 3; Chauffuer, 1; Carpenter, 1; Clerks, 2; Collector, 1; Dressmakers, 2; Director, 1; Electrician, 1; Engine-cleaner, 1; Housemaid, 1; Housewives, 6; Labourers, 4; Manageress, 1; Mother's Help, 1; Packers, 2; Painters, 2; School Children, 13; Stonemason, 1; Tailoress, 1; Timekeeper, 1; Watchmaker, 1; no known occupation, 1.

Puerperal Fever.—No notifications of this dangerous child-bed fever were sent in during the year, and there were no deaths. One notification of Puerperal Septicæmia was sent in, but was subsequently withdrawn; the diagnosis proving a mistaken one. Puerperal Fever being a preventible disease, we were entitled to look for a diminution in the occurrence of it. I forbid the nurse or midwife in attendance upon any notified case to go to another confinement for a period, and then only after a thorough cleansing and disinfection of her clothing and person, and, as far as possible, dwelling. The Medical Practitioners in the City I have found anxious to adopt all reasonable precautions, the chief being a temporary abstention from obstetric practice. Rigorous antiseptic precautions in obstetric practice furnish the best means of preventing the development of the disease, and as our midwives have now to be registered and are trained more scientifically, we may look justifiably for a steady lessening of Puerperal Fever; more particularly as parturient women themselves come to understand the vital importance of scrupulous cleanliness being observed by themselves, their attendants, and in all the surroundings. The Midwives' Act enables us to maintain a more vigorous control over this disease, as in 1910, certain additional provisions come into force.

Erysipelas.—Eighty cases were notified to me. Five deaths were registered from it. In 1911 the figures were 41 and 4 respectively. Erysipelas of a fatal type cannot be regarded as having been prevalent in the City.

Measles.—Measles was not notified during the year, but eighteen deaths were attributed to it. This dangerous disease, particularly on account of its liability to set up lung complications, and, on account of its lengthy incubative period and infectivity, is a source of administrative trouble to all concerned with the control and management of schools, especially infant schools. Notification would aid us to bring about an alteration in the attitude of mind assumed by many of the mothers of families in Norwich towards this highly dangerous infective disease, and the criminality of carelessness in dealing with it. In 1911 45, and 1910 8 deaths were registered as being due to this disease.

Whooping Cough proved fatal to 4 children last year. This is a result for 1912 which is much more satisfactory than that for the preceding year when 58 deaths from the disease were registered. This disease is highly infectious, and dangerous too. I gain information of its prevalence among children attending the schools only by indirect methods, and of its fatality from the death certificates.

Diarrhœa carried off 15 persons, 11 of whom were *under 1 year of age*, the greater number succumbing (as is customary) in the third quarter of the year. In 1911 there were 100 deaths. I attribute the prevalence of and mortality from this disease to *bad feeding, and particularly to carelessness in the treatment and storage of milk and other food, to flies, and to soil and air pollution, due to the retention of filth upon the premises.*

Influenza.—7 deaths were certified to be either directly or indirectly due to this disease; in 1911 the number of deaths ascribed to it was 5.

Cancer.—152 deaths were attributed to malignant growths during the year; in 1911 the number was 138; in 1910 it was 118

Septic Diseases (other than those specified) caused the deaths of 54 persons; in 1911, 61; in 1910, 56.

THE TUBERCULOUS DISEASES.

(Forms of the diseases called commonly “Consumption.”) 131 deaths were certified to be due to tuberculous disease of the Lungs (Phthisis) and 55 to other forms of tuberculous infection; making in all a total of 186 *deaths from the tuberculous diseases*. This is below the average for the preceding eighteen years, which average amounts to 214 *deaths from the tuberculous diseases per annum*. Nothing but benefit to the healthiness of our community can result from the general apprehension of the fact that the tuberculous diseases are dangerous—the phthisical type particularly. I feel that I have done well in insisting, as for many years I have done, upon the dangers to the community of these *catchable and largely preventible diseases*. The chart shows the weekly fluctuations in the tuberculous death-rate throughout the year; and it will be worth the reader’s while to compare this chart with the charts of the nineteen preceding years. The returns for the nineteen years confirm the fact that the *tubercle bacillus* (the micro-organism of whose pernicious activity, these diseases furnish us with reliable information) is no stranger among us. It flourishes practically wherever people are crowded together, and may be said to be entrenched in all old cities. This lethal bacillus, which has cost, and is still costing us, as a nation, directly or indirectly, millions of money, and goes on reaping its untimely harvest of lives year after year, is most at home in dark, ill-ventilated places, and is much favoured by overcrowding in any dwellings. *Sunlight and fresh air, fortunately, are destructive to it*; which fact helps to explain why sanitary experts claim that every dwelling shall have good *air space, and freedom for admission of sunlight into and about it*.

In 1893 I first offered to disinfect gratuitously the rooms, which had been occupied by a tuberculous patient, after the removal by

death, or otherwise, of the victim of the *tubercle bacillus* ; and there has been a really remarkable growth of opinion on the part of the public that it is a wise step to have rooms, etc., disinfected after a death has occurred from tuberculous diseases.

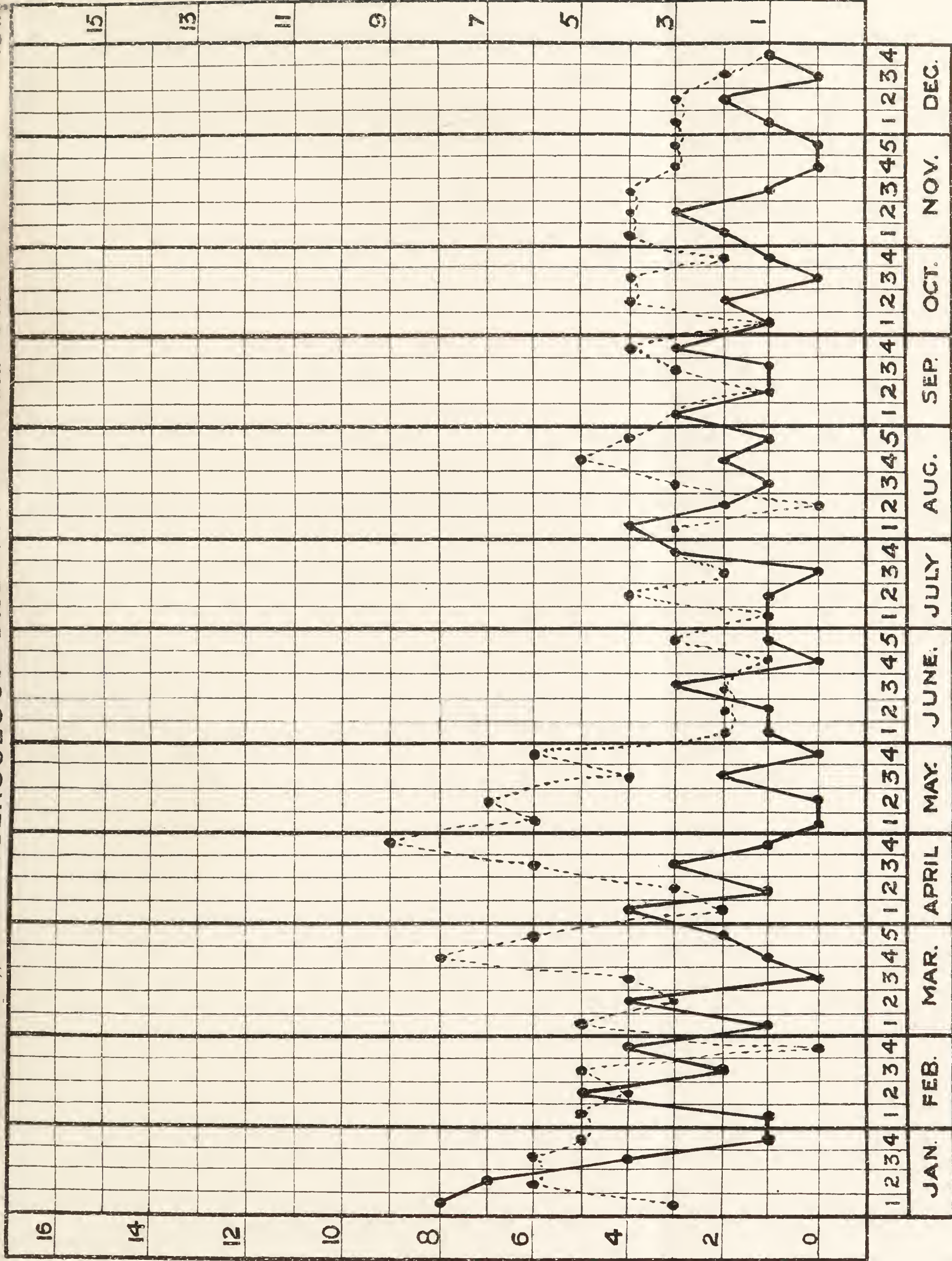
The *tubercle bacillus* is coughed up constantly in large numbers with the spittle of consumptive people, and this same bacillus is present commonly in the discharges from tuberculous glands, abscesses, &c. Should hæmorrhage occur, the specific bacilli will pretty certainly be carried out with the blood. Hence the importance of either rigidly disinfecting (boiling is a good method) or burning any rags, clothes, &c., soiled with the blood or expectoration. For if the extruded matter be left to dry, it will, in time, become fine dry dust ; which dust may be kicked or brushed up into the air, and as it contains the potentially active bacilli, it may be the means of introducing these into the bodies of others ; or the cougher-up of the infective material may, in this way, infect his own and other's food, and re-infect himself. It is only a piece of enlightened self-interest on the part of a consumptive to take care that all expectorated matter is disinfected rigidly, or, what is better, burnt promptly ; but it is also his imperative duty to minimize the risk to his fellows by so doing. It is *what a consumptive coughs up* that is to be feared ; not his mere breath—one may sit, for example, in the same room with him, if it is well ventilated, and his habits be cleanly, without practical risk. Spitting about in public places and vehicles becomes, when the spitter is a consumptive, in addition to being a disgusting habit, a dangerous one as well ; a habit that should be discouraged rigorously, alike in the interests of decent manners and of the general health. A consumptive can always carry a damp rag with him, which rag he can burn easily.

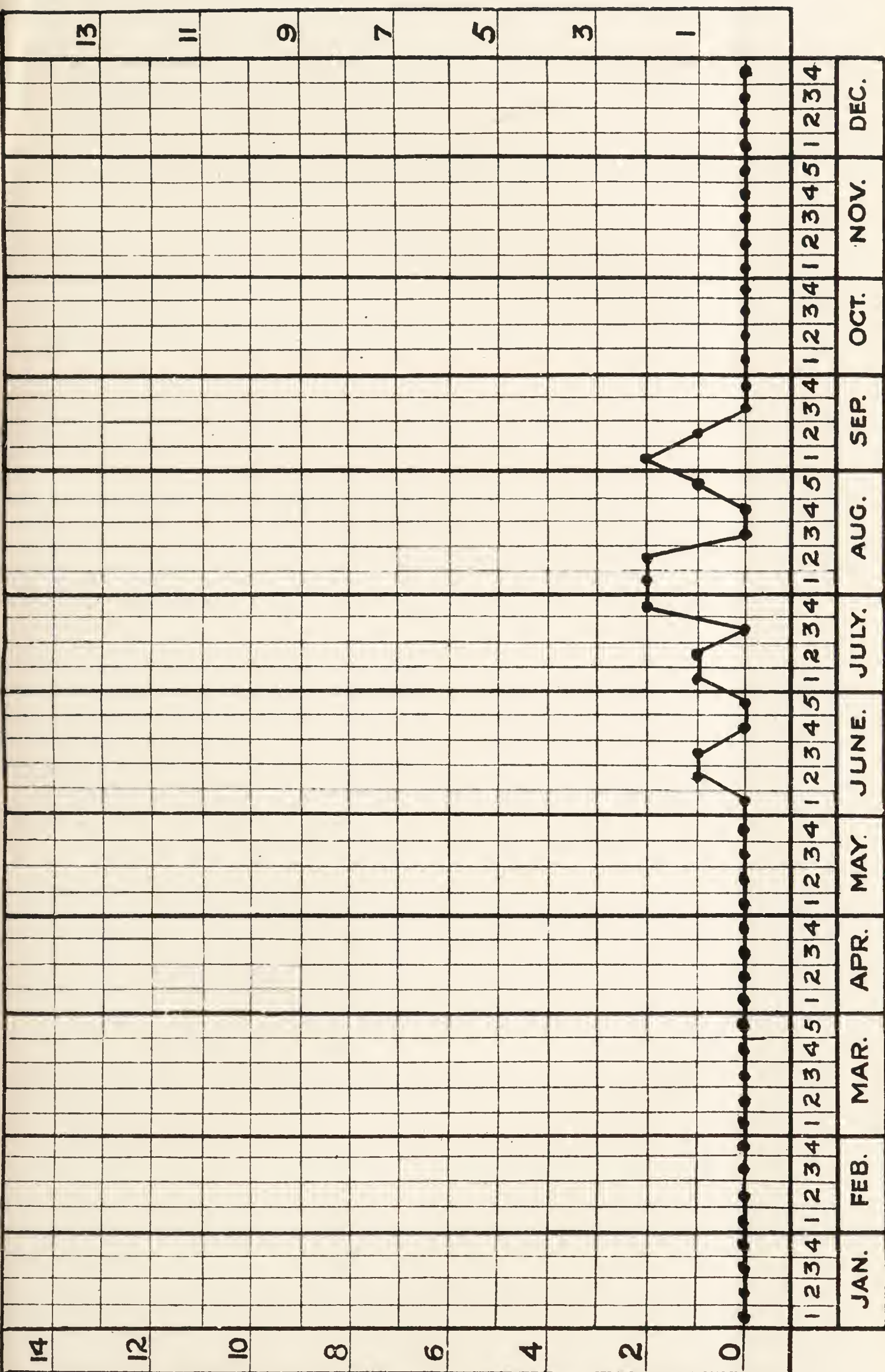
Unfortunately, a very large number of people inherit a predisposition, that is a heightened liability to fall victim to tuberculous disease, and many others favour the development of the disease in themselves, through lowering their general tone by living amid surroundings of a depressing character, such as

29

TUBERCULOUS DISEASES.

Black Dashes





Total Tenements and Tenements of less than Five Rooms, distinguishing those occupied by various numbers of Persons, in the County Borough and City of Norwich and its Constituent Wards, 1911.

WARDS.	Families or separate occupiers.	Population	Total Tenements	Number of Rooms in each Tenement.	NUMBER OF OCCUPANTS IN EACH TENEMENT.												Number of Tenements of less than five rooms.
					1	2	3	4	5	6	7	8	9	10	11	12 or more	
NORWICH, City of	28234	121478	28081	1 2 3 4	235 496 179 291	87 489 398 937	16 237 339 910	11 169 268 748	6 91 181 560	1 32 134 389	264 83 264 126	6 49 20 77	2 20 6 22	6 6 6 4	356 1530 1668 4334		
No. 1 or CONESFORD	1186	5207	1163	1 2 3 4	12 39 20 12	11 45 35 36	1 21 28 37	1 19 22 30	1 6 15 25	1 ... 2 8	... 1 9 10	... ... 6 4	... ... 1 3	... ... ... 2	27 131 139 167
No. 2 or BER STREET	1745	7479	1738	1 2 3 4	17 51 15 37	3 49 37 102	1 21 32 88	... 15 24 69	... 9 12 67	... 9 12 42	... 1 11 27	... 1 5 16	... ... 4 9	... ... 1 1	21 156 161 461
No. 3 or MANCROFT	713	3041	697	1 2 3 4	11 29 12 7	2 20 23 32	... 11 16 34	... 5 14 14	... 2 9 7	... ... 6 14	... ... 5 6	... ... 3 2	... ... ... 2	... ... ... ...	13 67 89 118
No. 4 or WESTWICK	1386	5418	1373	1 2 3 4	38 68 15 20	12 46 50 76	2 23 28 63	1 19 32 48	1 8 18 46	... 1 11 23	... ... 6 15	... ... 10 6	... ... ... 6	... ... ... ...	54 165 171 307
No. 5 or COSLANY	1531	6275	1522	1 2 3 4	74 55 20 26	34 78 57 56	3 45 53 69	5 31 43 70	2 19 34 40	... 5 37 41	... 4 19 32	... 3 9 19	... 1 6 10	... ... 1 1	118 241 283 369	
No. 6 or FYE BRIDGE	1630	6748	1621	1 2 3 4	37 86 14 15	11 96 54 63	1 45 64 57	1 32 47 46	... 18 31 33	... 9 41 28	... ... 19 30	... ... 10 16	... ... 7 6	... ... 3 3	50 286 291 297
No. 7 or THORPE	1899	8703	1877	1 2 3 4	4 19 5 4	... 17 14 36	1 8 10 31	... 6 9 37	... 3 6 20	... 1 4 17	... ... ... ...	... ... 1 3	... ... ... ...	... ... ... 1	5 54 50 164
No. 8 or LAKENHAM	1351	5726	1345	1 2 3 4	1 13 9 27	... 19 15 90	... 4 13 66	... 5 15 77	... 4 6 56	... ... 4 30	... ... 5 23	... ... 3 5	... ... ... 5	... ... 1 1	2 45 71 381
No. 9 or TOWN CLOSE	1619	7121	1615	1 2 3 4	10 34 13 18	... 30 20 75	... 7 19 96	... 8 16 60	... 5 9 60	... 2 4 39	... ... 3 23	... 1 ... 13	... ... ... 4	... ... ... 2	10 87 84 391
No. 10 or EATON	3620	14560	3611	1 2 3 4	9 11 1 11	... 3 6 28	... 1 7 29	... ... 1 19	... ... 1 16	... ... 1 12	... ... 1 8	... ... ... 2	... ... ... 2	... ... ... ...	9 15 18 127
No. 11 or NELSON	1514	5732	1509	1 2 3 4	10 26 16 37	... 17 19 100	... 3 12 93	... 3 12 73	... 1 3 43	... 1 ... 39	... ... ... 15	... ... ... 4	... ... ... 1	... ... ... ...	10 51 62 409
No. 12 or EARLHAM	1567	7048	1560	1 2 3 4	1 8 8 11	... 4 6 20	... 1 2 33	... 1 2 21	... ... 2 8	... ... 1 7	... ... ... 2	... ... ... 3	... ... ... ...	... ... ... ...	1 14 22 104
No. 13 or HEIGHAM	1627	7240	1621	1 2 3 4	1 7 3 12	... 9 6 42	... 2 3 37	... ... ... 27	... ... ... 21	... ... ... 10	... ... ... 4	... ... ... ...	... ... ... ...	... ... ... ...	1 18 12 156
No. 14 or WENSUM	1361	6019	1359	1 2 3 4	1 14 10 14	1 17 18 72	... 8 11 55	... 3 6 37	... 4 9 45	... ... 1 25	... ... 2 26	... ... ... 9	... ... ... 10	... ... ... 1	2 46 58 295
No. 15 or CATTON	2679	11750	2673	1 2 3 4	1 18 13 26	... 16 22 68	... 11 22 78	1 8 18 77	... 1 9 48	... 2 6 33	... ... 2 20	... ... 1 11	... ... ... 8	... ... ... 2	2 56 94 372
No. 16 or MOUSEHOLD	2806	13411	2797	1 2 3 4	8 18 5 14	13 23 16 41	6 26 19 44	2 14 7 43	2 11 10 25	... 2 4 25	... 2 1 15	... 1 1 11	... 1 ... 2	... ... ... ...	31 98 63 216	

Persons in Public and Charitable Institutions, Military and Naval Establishments, Hotels, Boarding Houses, and Business Establishments are excluded from the Tables, as are also persons on board vessels, or sleeping in caravans, tents, sheds, &c., or in the open air. The figures may therefore be taken to relate as nearly as possible to "Private families."

ill-lighted, dusty, and badly-ventilated shops, heated work-rooms, houses, and offices. A person enjoying fairly good health may, and probably does, take in tubercle bacilli from time to time with his food and air; but commonly the resisting power of his tissues is able successfully to cope with the invaders; the person, however, whose health is below par, and whose tissue-resistance is enfeebled, such an one all too frequently succumbs—and the onset is so insidious that the bacilli may gain a firm hold before the mischief is noted. The great general preventatives of consumption are *good food, sunlight, and fresh unbreathed air.* There are grounds for believing that *pulmonary tuberculosis is due, more often than is supposed, to transference of infection from the alimentary tract.* When a member of a household have fallen a victim to one or the other of the tuberculous diseases, it is not necessary to treat him as a social leper. If precautions be taken to prevent *anything he coughs up* from ever drying, and if the rooms occupied be ventilated effectively, he may share the ordinary family life. He should, however, sleep in a bed by himself, and, where practicable, *in a separate room*; this room should be as large as possible, and the consumptive should early acquire the habit of *keeping the windows always OPEN*, supposing, as is commonly the case, there is no other means of admitting fresh air; perhaps the simplest, and certainly one of the best means of doing this, is to insert a good-sized grating at *the floor level* in the external wall, delivering, if possible, *fresh air under the bed* (by means of a simple valve the incoming air can be directed upwards to the bottom of the bed); the atmosphere of the room can then always keep refreshing and healthsome, whether the window be closed or not.

In towns the air may be rendered more acceptable to the irritated lung tissues by causing it to pass through a screen of stretched flannel, which will filter out effectually from the air particles of dust, "blacks," &c. *Under no circumstances is it prudent to turn the room into practically a closed box.* Let the bed clothing be warm and light, *e.g., ventilated eiderdown quilts.* With good air, cold never need be feared. I do not believe that moisture

is detrimental to a consumptive, but I do believe that the lowered barometric pressure which usually accompanies it is, by leading to the engorgement and relative congestion of the superficial vessels. The important point is to keep a consumptive irrigated constantly *with unbreathed air*. It is when the bacillus-riddled victim of tuberculous disease becomes too weak to attend to himself carefully that the great risk of infecting his bedding, &c., and room occurs, and hence the sensibleness of having these carefully disinfected, after pale death have entered with equal foot, whether it be into the hovels of the lowly or the halls of the great.

Tuberculous disease may be conveyed to the human by other animals, notably, by cattle. Dairy cows, in particular, if kept in over-crowded and badly-ventilated sheds, fall ready victims to tuberculous disease, and, *through their milk*, may convey it to milk-feeding people, *particularly children*. This danger, in a great measure, may be guarded against by, *in all cases, boiling or otherwise thoroughly cooking suspected milk* before consuming it. There is a lessened but still sensible risk in eating the flesh of tuberculous cattle, for the risk cannot be entirely banished by cooking, the interior portion of joints, etc., rarely reaching a temperature sufficiently high to kill the bacilli.

It should be the duty of specially-appointed veterinary surgeons *to make periodical inspections of all dairy and other cattle*—to order their destruction when desirable (fair compensation to be given in all cases where the owner has taken reasonable care to give no encouragement to the disease), and to supervize the disinfecting of the stalls, sheds, etc., which have been occupied by the affected animals.

AN ENQUIRY INTO THE INCIDENCE OF CARCINOMA IN NORWICH.

1893—1912.

W. L. GOLDIE, F.R.C.S.

In the last published report of the Registrar General, in a review of the principal causes of death, Dr. Stevenson says: "Cancer stands out as the one cause of death accounting for a really considerable and significant increase of mortality. How far improvement in diagnosis and certification accounts for this increase it is difficult to say. Doubtless it does, to a very large extent, but on the other hand certain facts seem to point to the reality of the increase, at all events of some organs."

The theory has also been advanced that owing to the greatly decreased mortality in childhood, more people live to arrive at the "Cancer Age," but, as Newsholme has pointed out, this implies a mental confusion between deaths and death-rates.

In order to ascertain whether there has been any change in the death-rate and primary site of disease in Carcinoma in the City of Norwich, this attempt has been made to analyze the death returns for the last 20 years, viz., 1893—1912.

In any attempt of this character certain obvious difficulties at once arise. Thus in the earlier years but little care was taken to differentiate between Carcinoma and Sarcoma. In a certain number of cases the assigned cause of death has been "Malignant disease," in others where the probability of Carcinoma is strongly suggested, no mention is made of Malignancy, but the cause of

death is attributed to "intestinal obstruction," "enlargement of liver and chronic jaundice," "stricture of œsophagus," "stricture of rectum," etc.

All such cases have been rigorously excluded with the result that thereby the Cancer death rate is undoubtedly unduly favourably represented.

In the case of the total death rates, as far as possible, all Cancer deaths occurring in Hospitals and elsewhere of non-residents have been excluded, as doubtless in recent years owing to the advances in diagnosis and in operative surgery, the more adequate Hospital accommodation and the easier access to the City, an increasing number of sufferers have been attracted to the town, thus possibly giving rise to a spurious increase.

Owing to the comparatively small number of annual deaths from Cancer the period under consideration (1893-1912) has been divided in 4 quinquennia.

Table I. (in which the Registrar General's nomenclature has been adopted) shows the total deaths in each of the 5 year periods, and also the primary site of disease as given in the Death Certificate.

TABLE I.

	Male.	Female.	Total 1893- 1897.	Male.	Female.	Total 1898- 1902.	Male.	Female.	Total 1903- 1907.	Male.	Female.	Total 1908- 1912.
Lip ...	1	—	1	2	—	2	—	—	—	2	—	2
Tongue...	6	1	7	22	2	24	18	1	19	9	—	9
Jaw ...	1	—	1	1	2	3	6	1	7	6	1	7
Mouth ...	3	—	3	5	—	5	5	—	5	1	—	1
Oesophagus	12	6	18	8	10	18	13	9	22	26	6	32
Stomach	25	31	56	30	23	53	41	41	82	47	40	87
Intestine	22	15	37	18	32	50	24	23	47	27	27	54
Rectum	22	14	36	22	22	44	21	24	45	33	27	60
Anus ...	—	—	—	2	—	2	—	1	1	—	—	—
Abdomen	4	13	17	7	5	12	8	12	20	4	17	21
Peritoneum	3	8	11	3	7	10	4	11	15	—	3	3
Liver ...	14	25	39	20	33	53	24	44	68	37	42	79
Spleen ...	1	—	1	—	1	1	—	—	—	1	—	1
Kidney ...	2	1	3	1	2	3	6	2	8	—	2	2
Pancreas	1	—	1	1	2	3	9	8	17	7	2	9
Suprarenal	—	—	—	—	—	—	1	—	1	—	2	2
Gall Bladder	—	—	—	—	1	1	1	1	2	1	6	7
Lymphatic Glands	1	—	1	3	—	3	1	1	2	4	2	6
Pelvis ...	1	3	4	1	3	4	1	3	4	—	—	—
Larynx...	4	2	6	6	3	9	5	1	6	8	2	10
Pharynx	1	—	1	—	—	—	1	1	2	4	1	5
Penis ...	4	—	4	1	—	1	2	—	2	4	—	4
Testis ...	—	—	—	1	—	1	1	—	1	—	—	—
Prostate	3	—	3	1	—	1	—	—	—	4	—	4
Ovary ...	—	2	2	—	1	1	—	5	5	—	9	9
Uterus ...	—	83	83	—	84	84	—	95	95	—	76	76
Vagina ...	—	7	7	—	6	6	—	6	6	—	4	4
Bladder	6	3	9	7	1	8	10	1	11	10	3	13
Breast ...	—	26	26	—	63	63	1	45	46	—	69	69
Skin ...	8	5	13	11	5	16	6	5	11	8	3	11
Brain ...	—	—	—	4	1	5	1	—	1	2	—	2
Not stated	6	10	16	7	11	18	6	14	20	17	11	28
Total ...	151	255	406	184	320	504	216	355	571	262	355	617
Deaths in City of Non-residents ...	12	2	14	18	15	33	21	17	38	35	22	57
Total City Deaths	139	253	392	166	305	471	195	338	533	227	333	560

From this Table it will be seen that there has been an increase in the total number of deaths in each quinquenium, and that this increase has prevailed in both sexes, with the exception of the period 1908-1912, in which the number of female deaths is slightly lower than in the preceding 5 years.

Diagram A shows the annual number of Carcinoma deaths per 1000 living.

Diagram B gives the Carcinoma deaths occurring at 35 years of age and upwards as a percentage of the total deaths from all causes at the same age periods, while diagram C shows the same in 5 yearly periods and demonstrates the fact that there has been a definite increase in the percentage mortality. This increase is common to both sexes, but for males is the more constant and maintained.

Age at Death.—The total deaths have been grouped into the usual age periods, and are given in Table II.

TABLE II.

MALES.

	20-25	25-35	35-45	45-55	55-65	65-75	75 & over	Total
1893-1897	1	2	11	32	53	38	14	151
1898-1902	3	1	9	42	52	56	21	184
1903-1907	1	4	15	40	63	70	23	216
1908-1912	1	4	15	47	84	75	36	262
	6	11	50	161	252	239	94	813

FEMALES.

	20-25	25-35	35-45	45-55	55-65	65-75	75 & over	Total
1893-1897	—	9	37	60	58	67	24	255
1898-1902	3	8	38	82	81	72	36	320
1903-1907	—	9	34	79	81	98	54	355
1908-1912	—	5	29	80	94	97	50	355
	3	31	138	301	314	334	164	1285

As these figures are somewhat complicated to depict diagrammatically, Diagram D has been substituted to shew the percentage of the deaths occurring at 55 years of age and over. This shews that there has been an increase in the age at death, for whereas in the 1st quinquenium only 58·5% of females and 69% of males died above 58 years of age, in the last quinquenium the figures were 68% and 74% respectively.

Male deaths.—With a view to ascertaining if persons engaged in any particular trade were locally in any marked degree liable to Carcinoma—the total deaths from all causes were ascertained in certain selected occupations and the percentage deaths from Cancer worked out.

The results are shown in diagram E.

Female deaths.—In only a very few death returns are the occupations of females stated, and therefore it has only been possible to divide the deaths into those of married women and spinsters.

In all 1285 deaths have occurred, 1141 in the former, and 144 in the latter.

Of this number 34 only have been under 35 years of age and of these 25 have been in married women and 7 in spinsters, 14 or nearly half the total number (all married women) have died of disease of the uterus. There has been no recorded death from Cancer of the breast. The youngest death noted was at 14 years of age.

Of the 1251 deaths among women of 35 years of age and upwards, 1114 have been in married women and 137 in spinsters.

Carcinoma of the uterus has accounted for 303 (27%), and of the breast for 171 (15%) of the former, whilst for the latter the figures are 21 (15%) and 33 (24%) respectively.

It will thus be seen that the percentage figures are almost exactly reversed for the two classes.

Site of primary disease.—(Diagram F. G. H. I.) The most striking feature is in females the enormous decrease in deaths from Carcinoma of the uterus which has fallen from 35% to 21·5%. (It is of some interest to note it closely accompanies the falling birth rate). Almost equally striking is the increase in Carcinoma of the breast. As diagnosis of disease in this situation has not improved *pari passu* with that elsewhere it is the more arresting and suggestive; disease of liver in both sexes, stomach and œsophagus in the male, and rectum in the female, all show an increase. On the other hand rectal Cancer in the male and œsophageal in the female shows a slight decrease. Disease of the tongue after a marked rise for 10 years has in the last quinquennium fallen to the same percentage as in 1893-97.

Cancer Districts and Houses.—All deaths (with the exception of those in Hospital, Infirmary, Nursing Homes, Asylums, or Institutions) have been allocated as far as possible to the different wards in which they occurred.

The distribution is given in Table III.

TABLE III.

	1893-97	1898-1902	1903-1907	1908-1912
1. Conesford ...	29	31	23	28
2. Ber Street ...	28	27	28	24
3. Mancroft ...	16	19	20	29
4. Westwick ...	30	23	27	28
5. Coslany ...	15	18	11	10
6. Fye Bridge ...	20	24	30	24
7. Thorpe ...	15	17	25	31
8. Lakenham ...	16	22	20	15
9. Town Close ...	16	18	30	29
10. Eaton ...	25	35	50	74
11. Nelson ...	16	28	28	34
12. Earlham ...	14	17	30	37
13. Heigham ...	23	19	22	19
14. Wensum ...	27	25	25	24
15. Catton ...	15	32	41	29
16. Mousehold ...	24	26	32	40
	329	381	442	475

There is no evidence to show that any ward is particularly affected. As regards houses, here again the evidence is quite negative. In only one house have three Cancer deaths occurred. Two deaths in the same house are recorded in 30 cases, in ten instances being those of husband and wife; in one of brother and sister, and in two of mother and daughter. In addition in two instances there has been a secondary death ascribed to Sarcoma.

Heredity and Marriage.—Heredity in Cancer is a point of some interest though up to the present no convincing evidence has been produced, as to this being a factor of much importance. The value of the records available are almost a negligible quantity and the case books and records of physicians and surgeons practising in the town would yield a far greater number of cases than it has been possible to trace from the death returns.

Up to the present I have only been able to find 19 cases in which both husband and wife have died of this disease, two of mother and daughter, one of father and son, and one of brother and sister.

Also one case in which two wives of one individual succumbed to this disease.

Of the cases occurring in husbands and wives in 10 the wife died first and in 9 the husband, the longest interval being 12 years, the shortest 3 weeks.

From the short period and small number of cases under review it is difficult to draw any conclusion of much value but it would appear—

- (1) That there has been a definite increase in the percentage mortality at 35 years of age and over (viz: 1 out of 11 men and 1 out of 8 women, as against 1 out of 17 men and 1 out of 10 women).
- (2) That taking Carcinoma of the liver as an index of intestinal disease (which in the male at any rate affords a fair criterion) there appears to have been an increase in disease of the alimentary tract.
- (3) That there has been a decrease in deaths from Cancer of the uterus disproportionate to improvement in diagnosis.
- (4) That there appears to be a slight but definite increase in the age at death, due probably in some degree to earlier and wider surgical interference.
- (5) That there is no evidence to show the existence of any "Cancer houses" or "districts" within the City boundaries.

DIAGRAM A.

Carcinoma Death Rate per 1000 living.

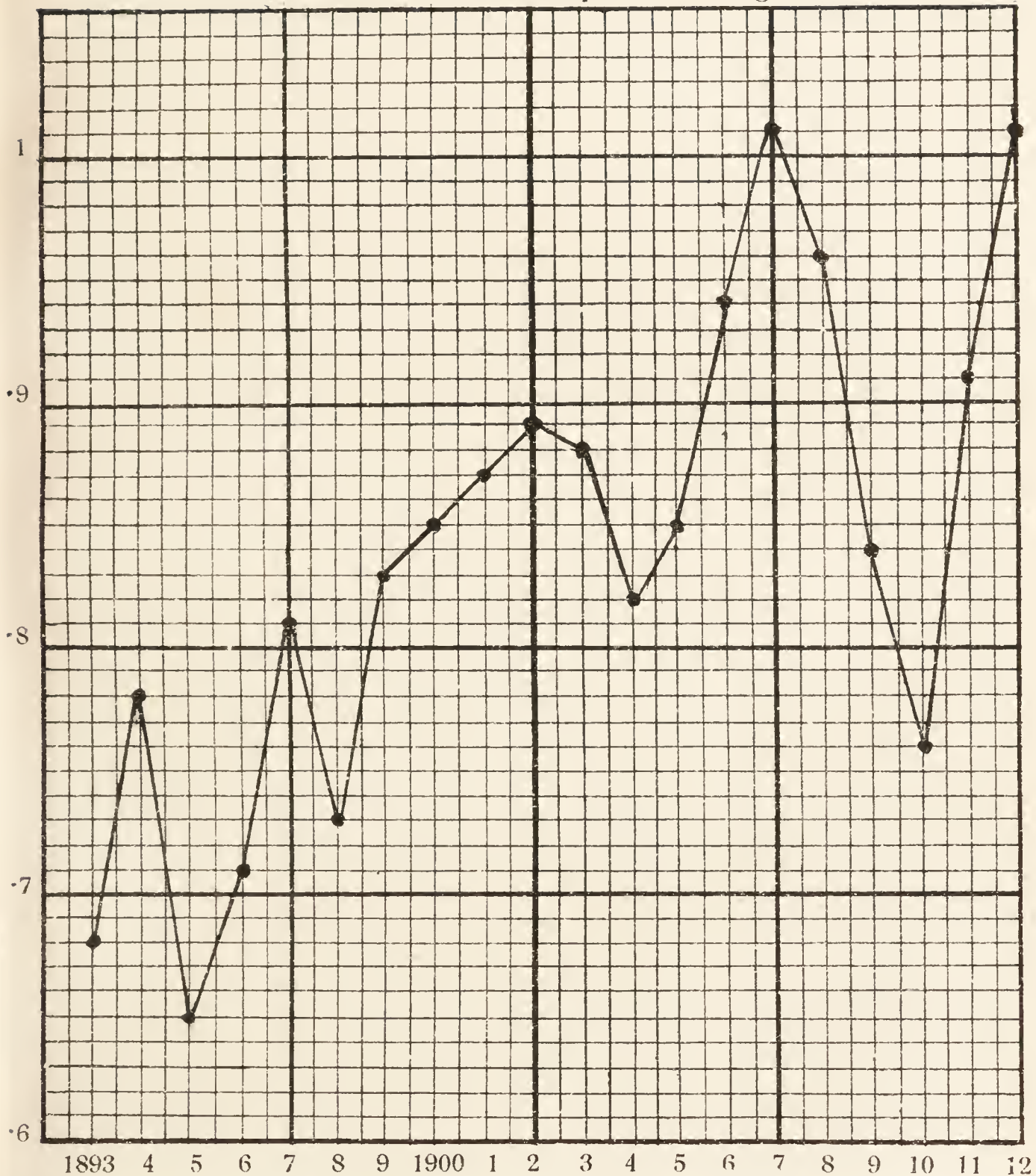


DIAGRAM B.

Shewing percentage of Carcinoma Deaths at 35 years and over
to all deaths at 35 and over (yearly).

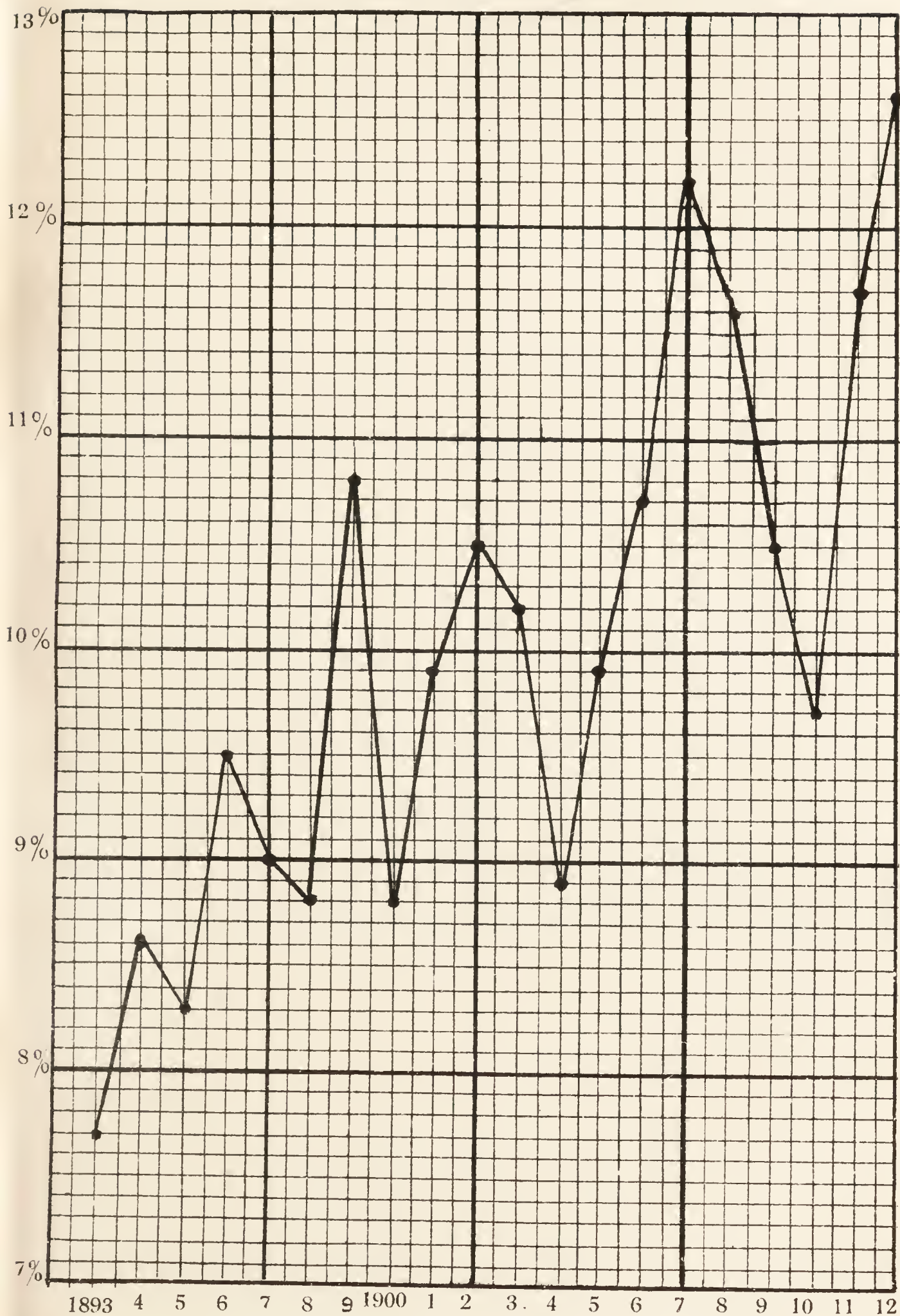


DIAGRAM C.

Showing percentage of Carcinoma Deaths at 35 and over
to all deaths at 35 and over (5-yearly).

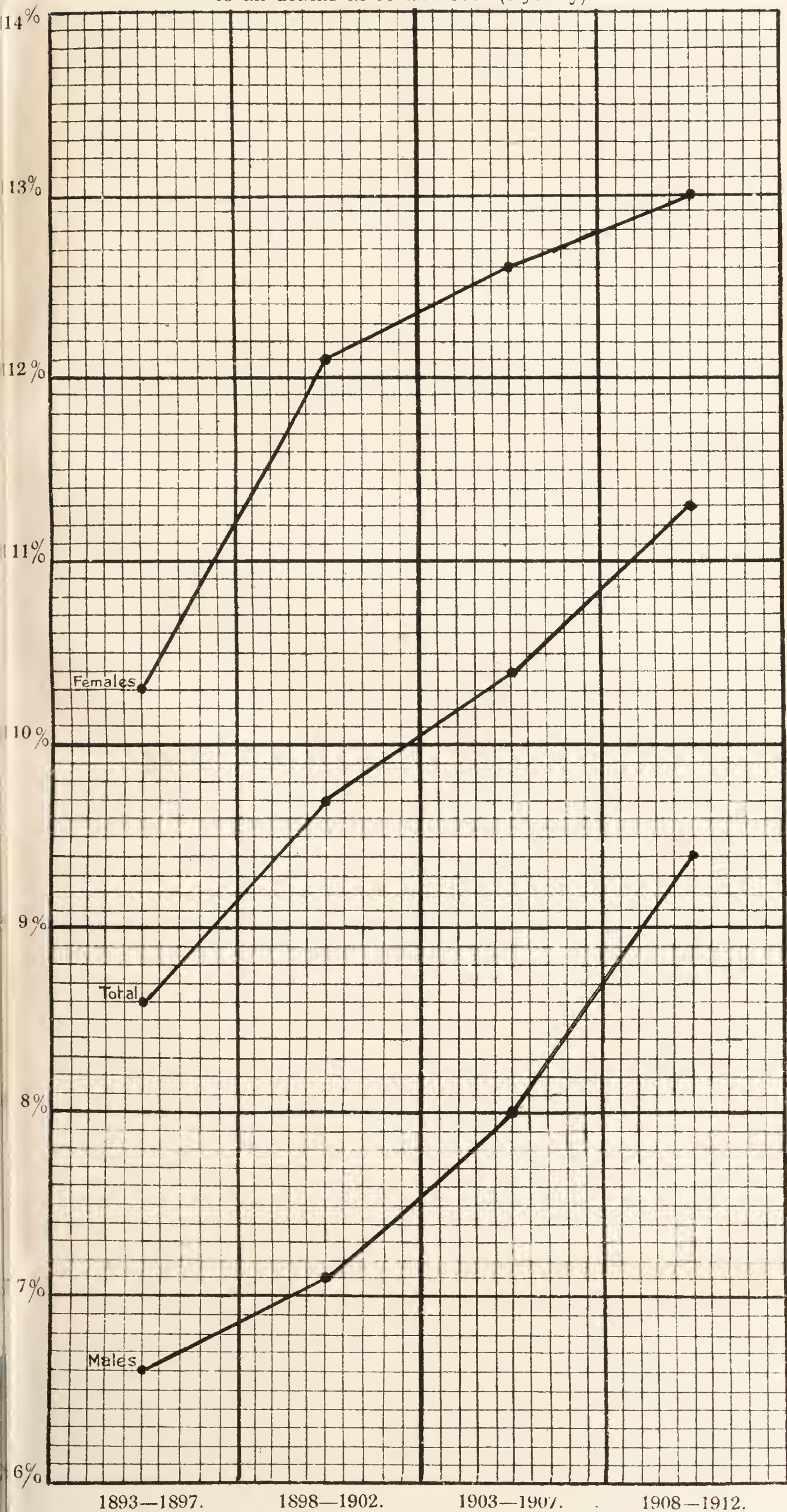


DIAGRAM D.

Showing percentage of all Carcinoma deaths occurring
at 55 years of age and over

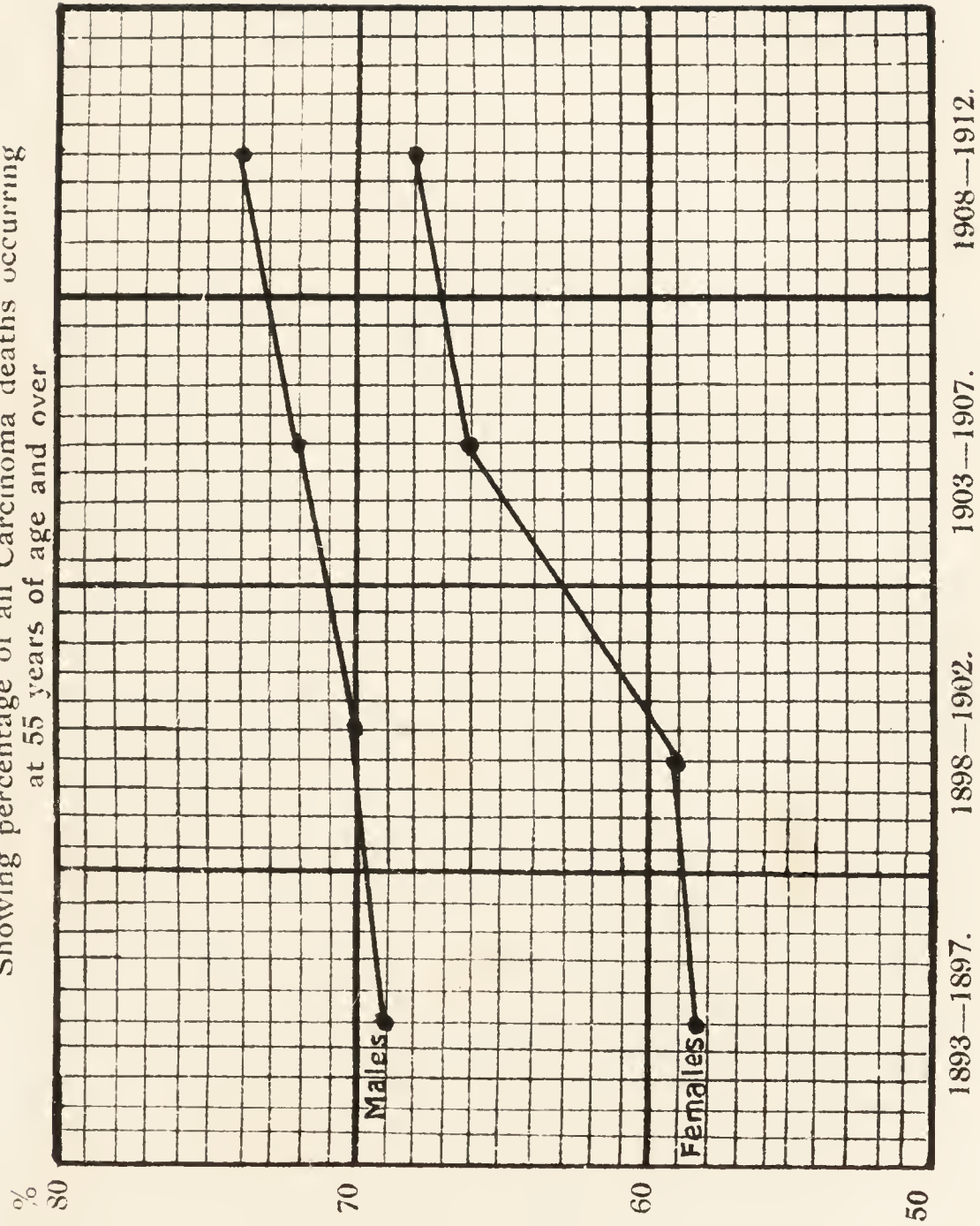
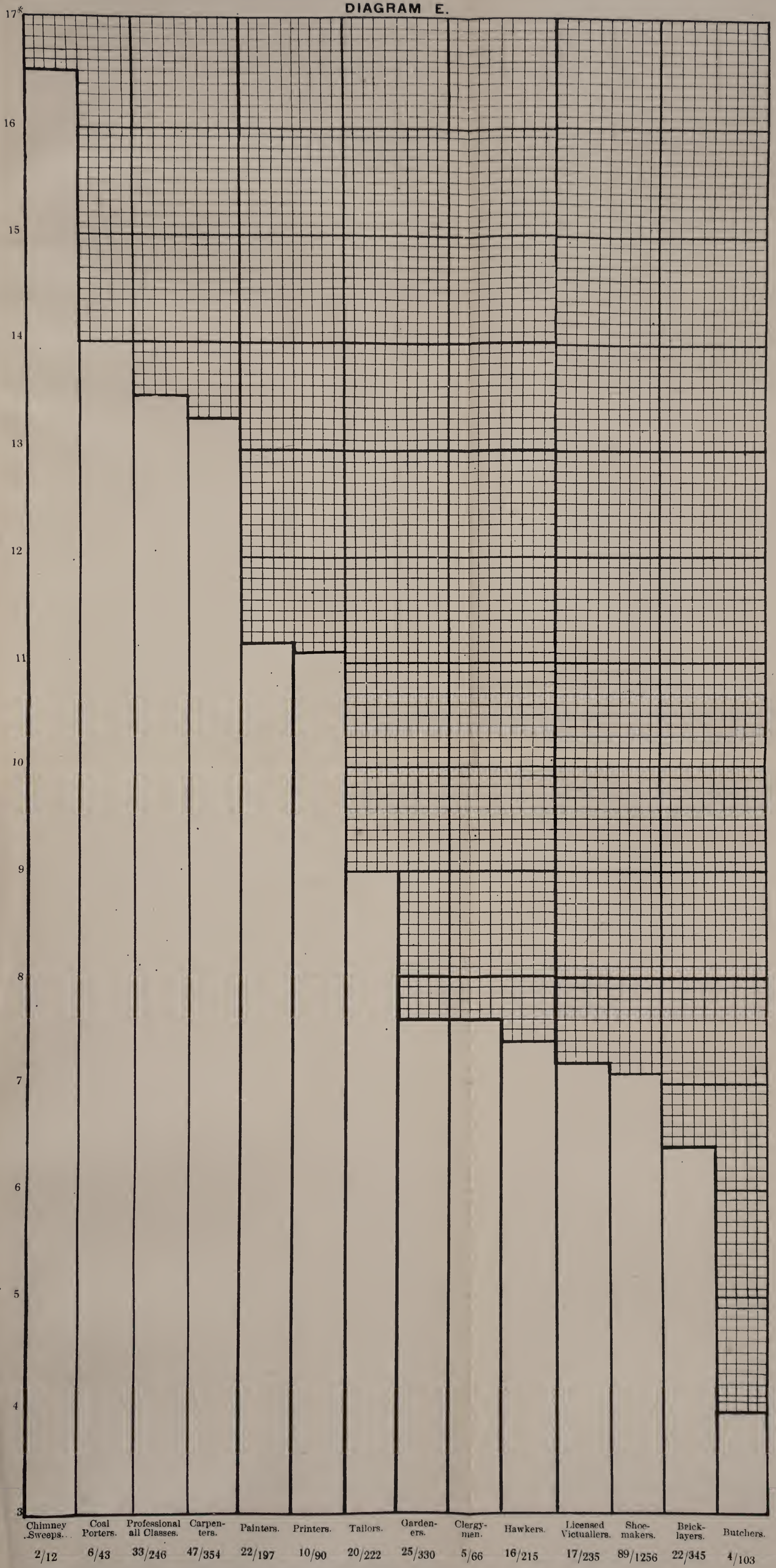


DIAGRAM E.



Percentage deaths various professions and trades (20 years, 1893—1912).

DIAGRAM F.

Showing percentage primary situation of Carcinoma (Males).

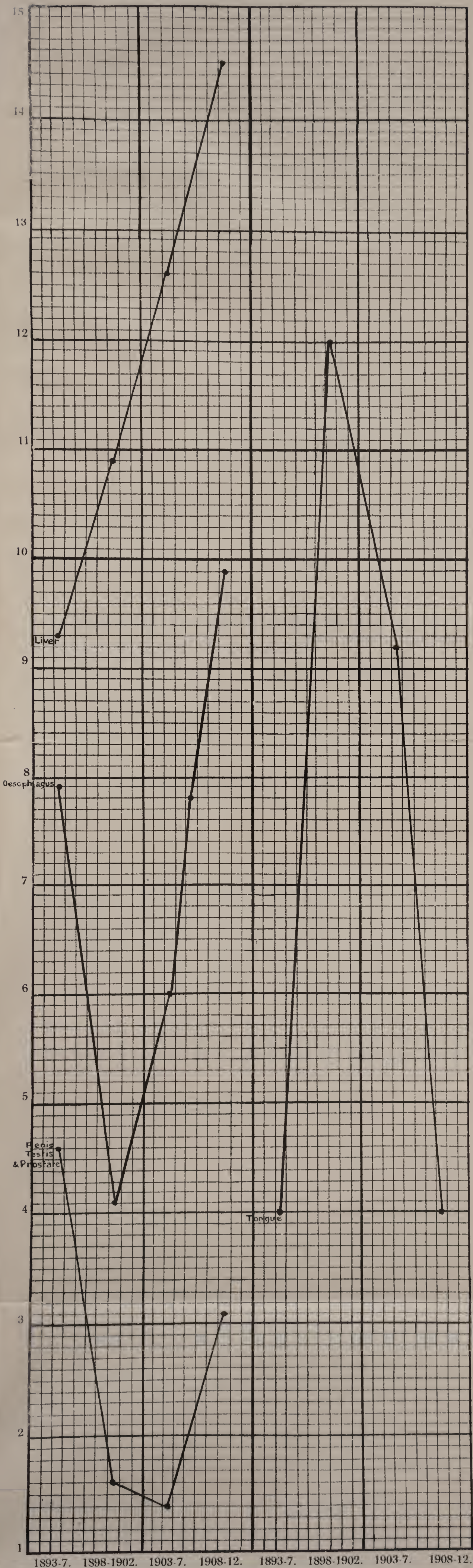


DIAGRAM G.

Showing percentage primary situation of Carcinoma (Males).

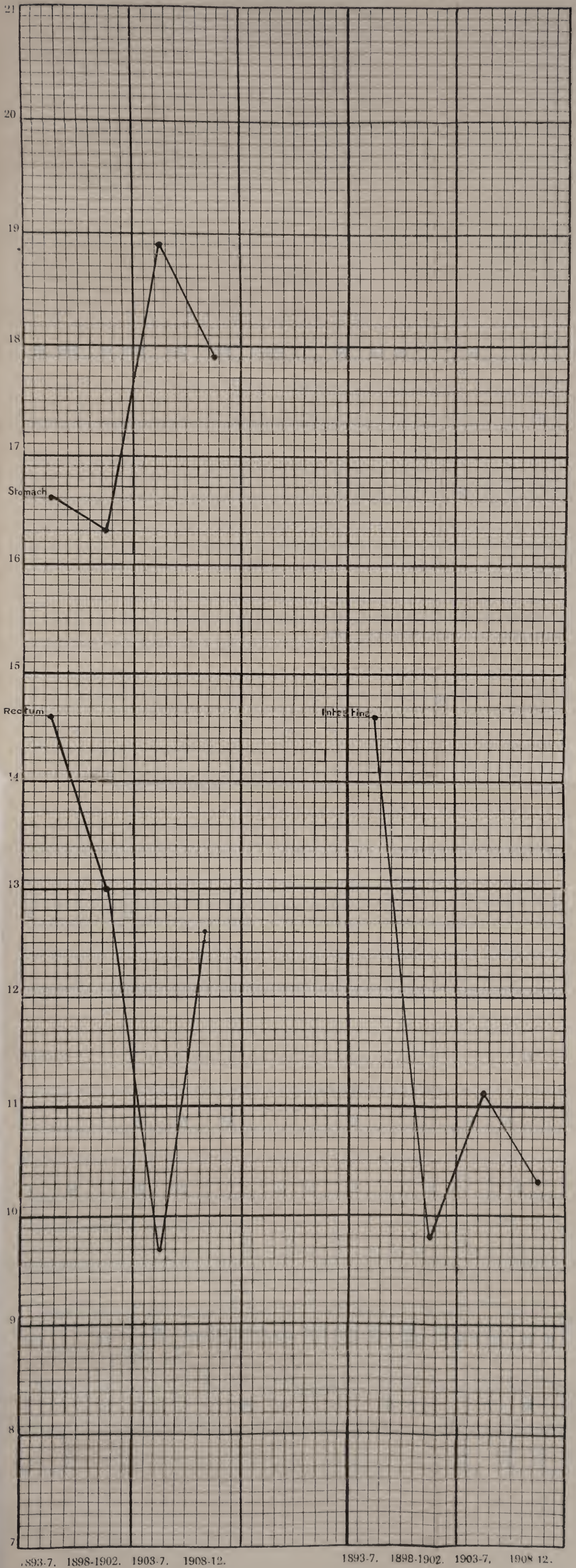


DIAGRAM H.

Showing percentage primary situation of Carcinoma in each quinquennium (Females).

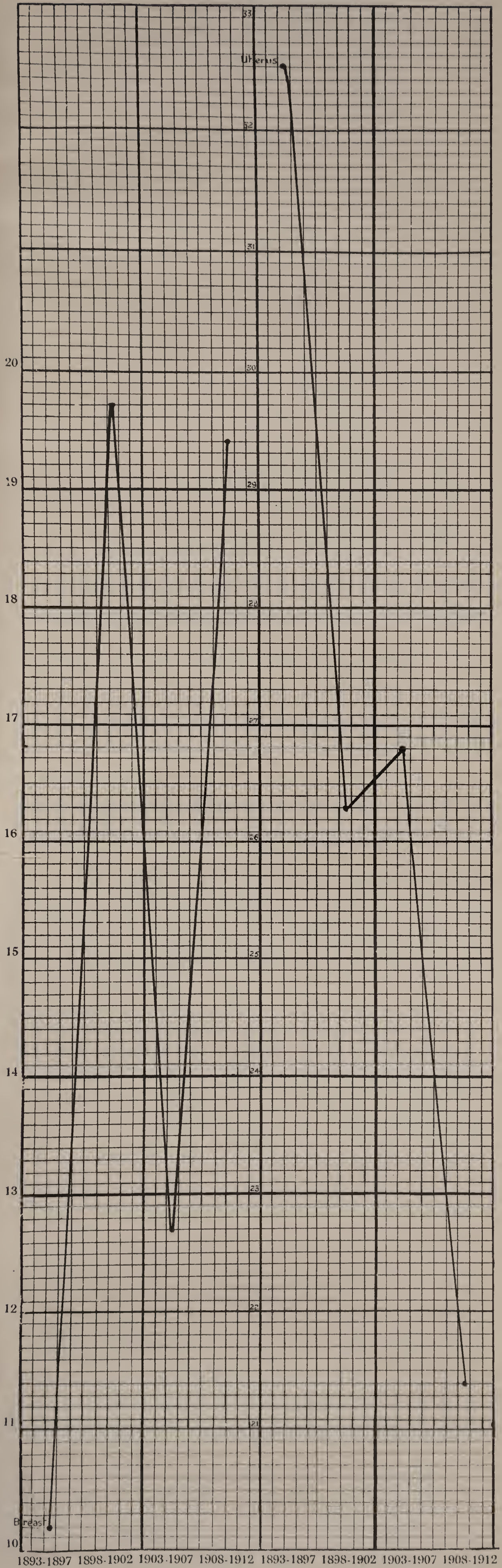
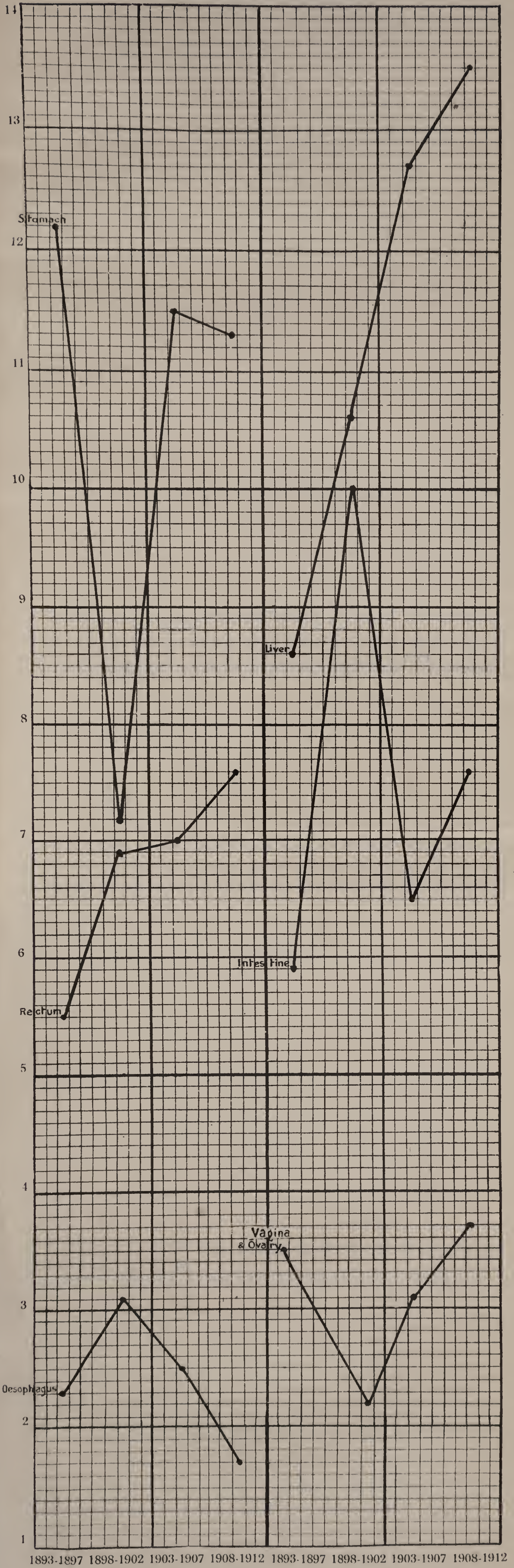


DIAGRAM I.

Shewing percentage primary situation of Carcinoma in each quinquennium (Females).



REPORT

OF THE

CHIEF SANITARY INSPECTOR.

HEALTH DEPARTMENT,

MUNICIPAL BUILDINGS,

Norwich, 1913.

TO THE MEDICAL OFFICER OF HEALTH.

DEAR SIR,

The following is a synopsis of the principal work carried out during the year ending December 31st, 1912.

In order that comparisons and references may be easily made, I have so far as possible followed up the form of report adopted during the past years.

3,815 Nuisances detected.

3,883 Notices served by order of the Health Committee.

1,225 Preliminary Notices served.

18,915 Premises Re-inspected.

2,465 Nuisances have been abated.

791 Special complaints have been received and the premises inspected.

2,125 Letters sent in order to obtain the abatement of nuisances, &c.

292 References to the City Engineer.

159 References to the Water Works Company.

The following are the principal matters that have been dealt with :—

468	Orders served to provide efficient closets.
514	„ „ repair defectively paved yards.
297	„ „ repair or disconnect rain water pipes.
381	„ „ cleanse and unstop yard drains.
849	„ „ provide efficient privy pans and receptacles.
141	Orders served to efficiently trap yard drains with gullies.
202	„ „ repair defective water closets.
95	„ „ cleanse dirty houses.
56	„ „ remove and cease to keep animals.
322	„ „ repair defective house roofs, floors, &c.
61	„ „ remove foul accumulations.
49	„ „ abate overcrowding.
105	„ „ repair defective eaves gutters.
53	„ „ repair or disconnect sink waste pipes.
22	„ „ empty and cleanse foul cesspools.
9	„ „ provide premises with a proper supply of water.

PRIVY CONVERSIONS.

Private owners continue to convert privies into water closets without notice from the Corporation. During the past year, 108 privies have been so converted.

INFECTIOUS DISEASES.

921 visits have been paid to infected premises.

1,265 rooms have been disinfected upon the removal or recovery of the patient.

Liquid and powder carbolic disinfectants have, as in former years, been given to householders gratuitously in all cases of infectious disease, and for disinfecting purposes generally.

HOUSE TO HOUSE INSPECTION.

6,680 houses and premises have been visited.

YARD AND COURT INSPECTION.

5,975 visits have been paid to yards and courts.

The privies and yards found dirty were cleansed at the request of the Inspectors. Other sanitary defects found are dealt with under term "Nuisances," in a preceding column.

SLAUGHTER-HOUSES.

Number of Registered and Licensed Slaughter-Houses, 41.

2,625 visits have been paid to Slaughter-Houses.

It was found necessary to caution several occupiers of Slaughter-Houses respecting the dirty condition of the walls and floors, and the non-removal of refuse in accordance with the Slaughter-House Bye-Laws.

MARKETS.

The Fishmarket has been visited and inspected daily, and the Vegetable, Fruit, and Provision Markets on market days.

The Inspectors on duty every Saturday evening for the purpose of inspecting the meat, poultry, fish, &c., exposed for sale in the Provision Market, and for examining articles of food exposed for sale in the poorer parts of the city, have on several occasions found it necessary to deal with various articles of food which were in a condition unfit for the food of man, and such articles have been included in the undermentioned list of unsound food.

UNSOUND FOOD.

The following have been destroyed as being unfit for human food, with the consent of the owners :—

- 12 Carcases of Mutton.
- 3 Forequarters of Mutton.
- 3 Carcases of Beef.
- 1 Forequarter of Beef.
- 19 Sides of Beef.
- 144 lbs. of Beef.
- 2 Carcases of Pork.

- 1 Carcase of Veal.
- 35 Ox Livers.
- 31 Ox Lungs.
- 14 Ox Kidneys.
- 7 Ox Spleens.
- 4 Ox Heads.
- 4 Ox Tongues.
- 1 Ox Heart.
- 1 Ox Tail.
- 4 Sheeps Plucks.
- 5 Pigs Plucks.
- 1 Pigs Head.
- 9 Crown Fats.
- 2 Draw Fats.
- 4 Fry Fats.
- 4 Sets of Skirts.
- 2 Bellys.
- 1 Tripe.
- 2 Udders.
- 23 Bags of Shrimps.
- 1 Ped of Shrimps.
- 20 Baskets of Shrimps.
- 6 Boxes of Shrimps.
- 6 Bags of Cockles.
- 25 Baskets of Prawns.
- 1 Kit of Whiting.
- 1 Box of Whiting.
- 1 Kit of Codling.
- 57 Boxes of Kippers.
- 12 Boxes of Fillets.
- 10 Bags of Whelks.
- 1 Barrel of Crayfish.
- 1 Bag of Mussels.
- 1 Barrel of Sprats.
- 59½ lbs. Tomatoes.
- 33 lbs. Gooseberries.

PROCEEDINGS UNDER THE SALE OF FOOD AND DRUGS ACTS.

During the year 235 samples of food and drugs have been submitted for analysis:—

Description of Samples.	Number of Samples.	Result of Analysis.	
		Genuine.	Adulterated.
Milk	152	127	25
Butter	46	45	1
Baking Powder	13	13	—
Coffee	6	6	—
Rice	4	4	—
Beef Sausages	1	1	—
Preserved Cream	3	3	—
Bread and Butter	6	5	1
Demarara Sugar	1	1	—
Black Currant Jam	1	1	—
Raisin Wine	1	1	—
Black Currant Wine	1	1	—
	235	208	27

Number of samples of milk taken on Sundays, 17.

In 14 cases proceedings were taken against vendors of adulterated articles:

12 in cases of adulterated milk.

1 „ „ „ butter.

1 „ „ „ bread and butter.

In 11 cases the magistrates convicted and imposed fines varying from 5/- to 10/- and 7/- costs.

3 cases of milk were dismissed.

In 13 cases of milk, the vendors were written to and cautioned.

Particulars of the prosecutions are given below :—

No.	Date.	Adulteration.	Article.	Fine.
	1912.			
62	Apr. 22nd	7 per cent. added water	Milk	10/- and 7/- cost
68	"	Foreign fat not less than 95 per cent.	Butter	5/-
84	May 20th	7 per cent. fat deficient	Milk	Dismissed
95	"	11 " "	"	10/- and 7/- cost
119	July 24th	8 " "	"	Dismissed
122	"	17 " "	"	10/- and 7/- cost
123	"	12 " "	"	Dismissed.
130	Sept. 4th	11 " "	"	10/- and 6/- cost
		& 18 per cent. added water		
133	Sept. 2nd	20 $\frac{1}{4}$ per cent. added water	"	5/-
134	"	7 $\frac{3}{4}$ " "	"	5/-
135	Aug. 26th	14 $\frac{1}{2}$ " "	"	10/- and 7/- cost
161	Dec. 10th		Bread and Butter	5/- and 6/- costs
	1913.			
210	Jan. 21st	10 $\frac{3}{4}$ " "	Milk	5/- and 7/- costs
224	"	7 $\frac{1}{8}$ " "	"	6/- and 10/- cost

The following prosecutions were also taken :—

Date.	Particulars.	Fine.
1912.		
April 22nd	For selling Margarine in package not duly branded	5/-
July 24th	For obstructing one of the Assistant Inspectors	Dismissed
Dec. 23rd	" " "	£2 and 6/- costs

WATER ANALYSIS.

5 samples of water have been taken from pumps, draw-wells, and taps.

1 sample was certified to be "unfit for drinking purposes" and dangerous to health.

4 samples were certified "passable."

In the case where the sample was certified to be "unfit for drinking purposes," the premises have been provided with the Water Works Company's water.

COWSHEDS, DAIRIES, AND MILKSHOPS.

COWSHEDS—

Number on register...	...	47
Number of cows	...	406

DAIRIES—

Number on register...	...	25
-----------------------	-----	----

MILKSHOPS—

Number on register...	...	226
Number of applications for registration	...	32
Number of milkshops closed	...	16

While many milkshops are kept scrupulously clean, there are a number where the milk is kept in close proximity to other articles which are liable to contaminate the milk.

It is much to be hoped that the granting of licences to unsuitable persons will shortly be forbidden by regulations.

COMMON LODGING-HOUSES.

The common lodging-houses have been visited weekly and were found to be conducted in a fairly satisfactory manner.

HOUSES LET IN LODGINGS.

579 visits have been paid to houses let in lodgings, and many rooms were limewashed at the request of the Inspectors.

CARAVANS.

16 inspections of caravans have been made.

MEETINGS OF OWNERS.

650 meetings of owners have been held.

OFFENSIVE TRADES.

272 Inspections have been made of premises where offensive trades are carried on.

SMOKE OBSERVATIONS.

62 smoke observations have been taken.

It has been necessary to caution several manufacturers and firemen, and recommend the use of a better class of coal and the exercise of greater care in firing.

SHOP ASSISTANTS' ACT.

456 inspections have been made to see that the requirements of above Act were carried out.

PIGGERIES.

122 visits have been paid to piggeries, many of which have been cleansed at the request of the Inspectors.

BAKEHOUSE INSPECTIONS.

Number of bakehouses on register, 151.

Visits paid to bakehouses, 248.

MARGARINE ACT.

508 inspections have been made of premises to see if margarine was sold, and where such was the case, to see that the requirements of the Margarine Act were carried out.

FACTORIES AND WORKSHOPS.

Total number of workshops in the City	...	...	660
Number of new workshops inspected	...	...	20
Total number of factories in the City	...	...	358
Number of outworkers' premises visited by Male			
Inspectors	...	...	334

The undermentioned are the insanitary conditions that have been dealt with at the above class of premises:

404 workshops and workrooms have been cleansed and limewashed.

- 4 Water closets have been provided.
- 3 Cases of overcrowding have been dealt with.
- 1 Workshop floor has been repaired.
- 10 Defective water closets have been repaired.

In 1 case the W.C. accommodation was efficiently screened from the workroom.

- 1 Case of insufficient drainage has been dealt with.
- 1 Ventilator hood has been fixed to gas stove.

SCAVENGING.

During the year 4,491 loads of Privy Bin Refuse were removed by the Night Waggon, and 23,977 loads of House Refuse by the Dust Waggon in the daytime.

11,003 loads of Refuse were removed by Wherry at the Fishergate Depot.

MEMORANDUM.

There are 1,440 Privy Pans and 845 Privy Bins in the City, while 26,106 houses are provided with water closet accommodation.

I am, dear Sir,

Yours obediently,

JOSEPH BROOKS,

Chief Sanitary Inspector.

